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ABSTRACT

The general goal of the National Institute of Education (NIE) is to improve practice in all areas of education so that all Americans can benefit from the best education possible. To determine methods for reaching this goal, this report describes NIE's mission, examines possible organizational structures for NIE, discusses suggested alternative programs, and describes the proposed transfer of programs from USOE to NIE. The proposed programs for NIE discussed in this report include adjusting inequities in educational spending, providing education services for poorly served clients, fostering community involvement in education through education vouchers, improving productivity in education, and developing theme schools. (Author/JF)

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NIE PLANNING UNIT

INTERIM REPORT

January 1972

EA 005 773

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SECTION ONE: MISSION

In his March 3, 1970, message on education reform, President Nixon proposed a National Institute of Education "for the purpose of enhancing equality of opportunity in education and developing new and better ways for people to teach and learn at every level." Legislation to establish the NIE is now in Congressional conference. Upon the bill's passage, this country will have a chance to vitalize educational research, build educational resources, help solve educational problems, and improve educational practice.

The need for the NIE is clear. In the past thirty years education's share of the gross national product has doubled; yet it would be hard to demonstrate that the quality of education has doubled. The educational plight of our cities worsens. Even our affluent surburban kids are telling us school is neither important nor useful.

The general goal of NIE is to improve practice in all areas of education, so that all Americans can benefit from the best education possible. To reach this goal, NIE will give priority attention to solving critical educational problems, fundamental research, building educational resources, and improving current practice.

To carry out its mission, a number of special features must be incorporated into the NIE. One major feature will be a focus on development, on moving current research into practice. Although there are definite gaps in our knowledge base, researchers already know much which could make a difference if it were adopted. Too little attention was paid to the process through which a good idea, or an important research finding, would actually be implemented

in a local community. Consequently, many helpful ideas or products never reached their intended clients. Therefore, NIE will concentrate on developing methods which insure that the research investment will actually impact educational practice, and work with other agencies to get those methods implemented.

While the dissemination and implementation of the results of educational research and development are an important responsibility of the NIE, so much controversy surrounds this function that we believe a special statement is appropriate here. Some advocates feel that sufficient knowledge of educational methods is now available so that, if these methods were properly disseminated with adequate funds, considerable progress could be made immediately in reforming the schools. Others believe that the difficulty really lies with development and evaluation. They maintain that we have seldom, if ever, been able to develop alternatives that are practical and politically and economically feasible and further, have no evidence to prove that any given innovation is really much better than the practices it replaces. When and if any alternative is properly developed and firmly proven, dissemination will prove no problem; the alternative will sweep the schools, just as penicillin swept through the medical profession once its efficacy was established. Since sincere and informed men hold both these views, probably both are partly correct. The National Institute of Education can aid in the problem by providing an emphasis on complete development and careful evaluation, by pointing out, with respect to each program just what was developed and tested, what question was asked and how firm the answer was.

In any event, NIE performance will be judged by the quality of

what is produced and whether appropriate R&D results have an impact on educational practice. If NIE is to be judged in these terms, then it must have mechanisms to assure the acceptance and implementation of its R&D outcomes and alternatives, whether the implementation is directed by NIE itself or by other agencies.

At present, there is insufficient evidence on the success of different dissemination strategies and very little information on how strategies should differ with the kind of R&D result being disseminated. Therefore, the National Institute of Education must undertake basic research and development work on alternative implementation strategies.

The diverse nature of NIE's R&D results and of its users preclude any single dissemination mechanism; but evidence from DOD's Project Hindsight indicates that the most effective implementation of R&D efforts results from the vision of a few men who develop the concept into reality and follow it through development and into practice. It is with this in mind that continuity of staff assignments within NIE was included as a special feature. This method will, we believe, increase the likelihood of implementation of the results of NIE work.

A problem related to dissemination is that questions of education are often questions of values and obviously, different people will have different values. National cultural pluralism and geographic diversity make it unlikely that a single solution to a nation-wide problem or concern will be satisfactory for everyone. Consequently, another special feature of NIE is that it will study and develop alternative solutions to particular problems or concerns. It will

make available the alternatives necessary for people to make choices, but it will not say that there is only one choice.

Another feature of NIE has to do with the scope of its activities and constituency. Past Federal education efforts have been organized and differentiated by age level, school organization, or subject matter. NIE will take a broader view of education, concerning itself with the education of all Americans of all ages, whether in school or out. Education is not something that happens six hours a day to people between the ages of six and eighteen, or two and twenty-two. Education is a life-long activity, and it is the goal of NIE to make that activity a satisfying one for all ages.

Legislative and Presidential interest for new and continuing Federal research and development efforts provide NIE with several distinct missions:

1. Create Feasible Alternative Solutions to Help Solve Education Problems of National Concern

This mission is the major focus for Federal Educational R&D and should become its most prominent activity. With the mission of problem solving, the activity must be well supported by sufficient resources to analyze major problems, design and implement programs of research and development, and then carry out and evaluate alternative solutions that are educationally sound and economically feasible.

2. Improve the Practice of Education

This mission is to improve the state of the art (and science) of curriculum, instruction, organization, supervision, and the other functional components of the educational system. The R&D programs that are designed to promote improved educational practices may be comprehensive, involving all components of a school system or specific

involving parts of the system. The focus, however, is to revise and advance current practices.

3. Build More Substantial R&D Resources to Provide a Knowledge Base for the Solution of Problems and Improvement of Practices

NIE must continue the long-standing Federal commitment to support basic and applied research on the foundations of education that will add to man's understanding; NIE must also continue to support the training of personnel capable of contributing to educational research and development. Without an increase in the quality and quantity of the problem solvers, the rate of improvement in education is not likely to increase. As another resource for improvement, NIE must continue to support new institutions that provide unique R&D capability not available in the private or public sectors. Thus NIE's mission to build R&D resources includes the development of new knowledge, personnel, and institutions.

SECTION TWO: ORGANIZATION

A variety of models for organizing R&D activities are being used by different Federal agencies. The Goddard Spaceflight Center and the National Cancer Institute organize their intramural research people by discipline, then "detail" individuals to project teams when a problem requires multidiscipline effort. Since NIE will be engaging in intramural research and must attract capable researchers, a project-by-disciplinary-matrix structure is an attractive alternative.

Another alternative, exemplified by NIH and NIMH, separates intramural and extramural research on the presumption that intramural researchers and managers of extramural grants are different kinds of people and work best on separate goals.

A third alternative is to organize NIE by constituent groups (vocational, handicapped, higher education, etc.). This arrangement affords organized groups a clear focus of support, enlists the aid of the field in encouraging increased budgets, and is not an uncommon arrangement in government organizations.

There are, of course, many other ways to design an R&D organizational structure, e.g., a functional arrangement with separate units for research, development, dissemination; organization by levels with preschool, elementary, secondary, and adult units. A thorough analysis of the dimensions of organizational design for NIE has been completed by the Rand Corporation, and provides a discussion of the advantages and disadvantages of various alternatives.

A review and evaluation of alternative structures is not presented here; the reader is referred to the several documents prepared by the Rand Corporation (1).

The recommendations presented below were developed by the Planning Unit staff after studying the numerous documents and conferring with a wide range of consultants. Although these recommendations comprise a single alternative suggested by information reviewed thus far, this proposed organization may be expected to be modified as guidance or additional information is received. The necessity of providing budget justification, personnel projections, and program descriptions led us to specify an organizational design. Some assumptions about the organizational framework were necessary to continue the planning process although we recognize that the Director of NIE will decide what kind of organization he wants. Our tentative design includes nine distinct organizational units:

I. NATIONAL ADVISORY COUNCIL

A National Advisory Council will have the responsibility for NIE's general policies. It will have its own staff, and in addition to policy matters, will regularly assess and report on the state of educational R&D.

Both versions of the Bill state that the Council shall consist of fifteen members appointed by the President for three year staggered terms. Ex-officio members may also be appointed by the President. The House version would have the Director and Commissioner of Education automatically serve in an ex-officio capacity.

Major differences in the two bills relate to the Council's degree of authority. The Senate version assigns a major policy formulation role to the Council, authorizing it to establish policy; the House version makes the Council an advisory body which makes recommendations to the Director and Secretary on matters of program and policies.

Since some differences in the Bill have not yet been reconciled by the Conference Committee and Congress, the functions and composition of the Council is still uncertain. Recommendations on the functions and composition of the Council will be prepared for the May report of the Planning Unit.

II. OFFICE OF THE DIRECTOR

The major responsibilities of the Director are related to decision-making, management, and reporting. He must coordinate the work of the Institute; determine program priorities, budgets, placement of programs* into specific units; and report on the Institute to appropriate governmental agents and to the public.

Various NIE units are assigned specific management responsibilities for the R&D program. That is, program initiation is the responsibility of the Policy Research and Planning Unit; technical management is accomplished in the operating program offices;

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* We use program here in the sense of a major integrated series of large scale activities, with a planned beginning and ending date, with operationally specified outcomes and accompanying progress milestones. Such a program includes a large number of project elements, is generally a multi-year commitment, and will generally exceed one million dollars in cost. Examples of existing programs include the experimental schools and the career development models.

contracts management is done in a unit within the Office of Administrative Services; and evaluation of ongoing programs is the responsibility of a separate Evaluation Unit. This division of labor allows efficient use of specialists in facilitating the R&D effort and enhances accountability of the program to the Institute's goals. However, it places special requirements for data collection, decision-making, and communication on the Director if the flow of work is to be smooth.

In this task of coordination, the Director must be able to answer questions like the following and act on his answers:

- What new programs should be supported with what level of funding?
- Where in the organization should new programs be placed?
- How much money should be allocated to specific current programs?
- Does the Institute's management and structure satisfactorily facilitate its research and development responsibilities?

This will require that he have a staff of his own to compile information and make recommendations, and that staff, in turn, must depend on the specific offices for input information and suggestions. Consider the examples below that briefly describe how some of these actions might take place.

Recommendations for all new programs will be initiated by the Policy Research and Planning Unit. Proposals for major new programs or new institutions will come from the NIE operating units, from outside clients, or from the Planning Unit's own internal program design section. In many cases the design section may have to work with an outside initiator to refine his proposal so that it is

ready to be acted upon. A summary of each program proposal will be sent to the Director's staff, with a rationale, implementation plan, and cost estimate. Where there are a number of proposals, the Policy Research and Planning Unit will submit priority recommendations with justification for their rankings.

The Evaluation Unit will provide data and recommendations on all current programs, based upon how well each program is meeting its goals. This evaluation function has been separated from the operating units where the programs are located in order to preserve objectivity. There is a special danger in the case of ongoing programs that program officers will be co-opted, and even without selfish objectives, begin to work toward indefinite continuation of their programs rather than completion. Separation of the evaluation function will help avoid this problem.

The Evaluation Unit compiles summaries of each program, with recommendations concerning quality improvement, contractors with the best performance records, and program value and tradeoffs, and submits these to the Director's staff.

The Director's staff, with its budget analysis experts, compiles the information and recommendations for both new program proposals and continuing program and support in a form that is suited to decision-making. They may call upon program officers, the contracts office, etc., as needed, to provide further input to this report.

A "Cabinet" is then assembled consisting of Directors of each major office and some persons from lower in the hierarchy who are selected each year to fill rotating positions. The Cabinet considers the overall budget plan and makes a formal report to the Director

concerning its adoption or adaptation and the placement of programs within NIE units. The Director will use his own staff report, Cabinet recommendations, and suggestions from the Advisory Council to guide his final budget and program placement decisions.

A similar detailed plan could be described for evaluating the Institute itself and preparing reports to the Secretary of HEW or the President. Here the Director will lean more heavily on the Advisory Council, who might themselves serve as a "Board of Visitors" or employ an outside contractor to do so. In every case, both because involvement in decision-making promotes commitment and quality work, the staff of the Institute will also be asked to reflect on such reports and suggest ways to improve programs or management.

III. POLICY RESEARCH AND PROGRAM PLANNING UNIT

This unit serves as a "think tank" operation to conduct policy research, to analyze problems and to propose new R&D program alternatives. The planning would be done by problem-oriented task forces consisting of first-rate professionals drawn from a variety of disciplines. Program plans would be submitted to the Director of NIE for decision. If program plans are clearly related to significant problems, provide a plausible path to implementation, and are within the budget and priority constaints of NIE, approval to proceed is likely to be given. All major new NIE programs are initiated from this unit.

Separating policy research and new program planning from the operating offices can result in poor articulation of what one group plans and what another group implements. Such problems of continuity

between plan and program is a common complaint in R&D agencies. We believe that by actually transferring the people who plan a program from the Planning Unit into one of the Operating Units (provided the decision is made by the Director to implement their program), articulation problems will be reduced. If the small cadre of people who were involved in planning a program are given responsibility for its implementation, their planning is likely to be more realistic and their commitment to follow through on the program to its practical implementation will be enhanced.

In operation, the Director and Advisory Council might select a new problem for analysis and planning and assign the task to the planners. A suitable staff would be employed to do the analysis and planning, preferably within one year's time. This task force would have a planning budget for whatever consultant and contract work was necessary if it could not be handled intramurally by the task force itself. Most of the professional personnel on a task force would be exempt or with a temporary (term) Civil Service appointment. Initial appointments would be for one year only.

If the Director and Advisory Council approve a program plan for implementation, the task force staff will be assigned to one of the three operating offices. If not, the appointments of the task force personnel will be discontinued or they will be reassigned to another planning or operational task force as appropriate.

The head of the Planning Unit will receive all proposals for new programs that are prepared outside the Planning Unit. He will be responsible for integrating such proposals with existing planning

work. Those proposals that are approved will be submitted to the Director with a recommendation for action along with an analysis describing how the outside proposal fits the framework of current planning for new initiatives and its similarity to ongoing programs in NIE. Using a single unit to handle all new program initiatives will help avoid duplication, and will increase the coherence of the overall NIE activity and will decrease the possibility that good ideas will fall between organizational units and get lost.

Once a program is approved and is established as an ongoing activity of one of the operating offices the program manager will have authority to fund projects within the scope of his program. New project proposals will not have to be reviewed by the Planning Unit.

The following sequence of steps for initiating a new program alternative within NIE illustrates how the actions of the Planning Unit relate to other offices in NIE:

1. The Director seeks the advice of the Advisory Council, Policy Research and Program Planning Unit, and client groups for new program ideas.

2. The Director with the concurrance of the Advisory Council, selects a limited number of problem or program topics for consideration by the Policy Research and Program Planning Unit. Available resources will probably allow consideration of no more than four or five new problems each year.

3. For each problem a small multi-discipline task force is formed, and with the help of consultants they analyze issues, define the problem, and plan an integrated R&D program, including tentative schemes for intramural research, program management staff requirements, extramural contracts, dissemination and implementation plans, budget needs, and evaluation plans. This program planning should usually take less than a year.

4. The Director, with the advice of the Advisory Council and within the constraints of available funds, either approves or rejects each major program proposal. This decision is made simultaneously with any proposed revision of existing programs. The aim is to have new and continuing programs and budget needs considered at the same time.

5. If approved, the program and its staff are assigned to an appropriate Office: Directed Programs, Resource Development, or Practices. Presumably, most of the programs will be assigned to the Office of Directed Programs, since problem-solving is NIE's major new thrust. Among the alternative choices, no more than two or three new programs should be started each year so that finances can be concentrated.

6. A new R&D program is budgeted, forward funding the program for its duration.

7. At the conclusion of its efforts, the R&D program organizational unit is disbanded. The professionals will be holding appointments exempt from Civil Service. They will either leave NIE or, if their skills are appropriate, be assigned back to another NIE unit.

8. Dissemination of the "end-product" of a program will depend on the nature of the outcome. Different kinds of programs will be implemented in different ways. In some cases the private sector will be used. Other programs will require legislation, others will make use of mass media, etc.

A key feature of this process however, is to have those individuals who managed the development of a program move into an operating agency such as USOE or DOL, a State department of education, a large city school district, wherever they might facilitate the dissemination and implementation of the program. This procedure implies that program plans that are prepared by the Planning Unit must include detailed tasks and costs for dissemination and implementation.

In proposing such a procedure we have been much influenced by the results of the Project Hindsight study conducted by the Department of Defense which reported that successful implementation of a

change was tied to an individual or cadre of leadership personnel who stayed with the program from initial planning through field implementation.

IV. EVALUATION UNIT

The Evaluation Unit will provide data on how well all current programs are operating and maintain files on the acceptability of performance of particular contractors. This Unit will be oriented toward normative evaluation, with its aim to discover gaps and flaws in programs, to recommend action for improvement or elimination of ineffective efforts and to suggest added funding for especially effective programs. Information from program management units will be considered in the evaluation, because their staffs probably know more about specific programs than anyone else. However, to avoid influence of the program management units, which may be co-opted by their interest in ongoing efforts, the Evaluation Unit will employ its own evaluation system and report directly to the Director. A new assessment system, as described below, is being designed for this Unit.

The Evaluation Unit will conduct its work through a two-tiered panel organization with a single Master Panel to which a series of Specialist Panels report. The Master Panel is a blue-ribbon, one-year advising group that recommends funding priorities among R&D fields and reports through the Head of the Evaluation Unit to the NIE Director. The Master Panel does not perform site visits to assess programs. Rather it uses information from in-house personnel, from Specialist Panels, and from outside contractors, to make

recommendations on funding priorities.

The Master Panel will be composed of 10 to 12 highly qualified professionals who possess broad knowledge of educational R&D. The intent is to get first-rate, very competent people who will furnish both stature and expertise to NIE program evaluation. All of the members of the Master Panel will serve for at least one year, with one-third of them being carried forward from one year to the next. Membership will require two to three months of work during the year. The Chairman of the Master Panel will be selected by the Director of NIE. He will serve full time for one year. He will assist in the selection of the other panelists, and may at his option have a half-time Assistant Chairman. The full-time appointment of the Chairman will allow him to participate in Congressional Committee hearings and to assist in preparing budget testimony.

Ongoing R&D programs will be grouped into 6-10 specialized clusters, with related programs within each cluster. Each cluster will be judged by a specialist panel of about five people that make priority recommendations within that specialty area to the Master Panel. These are called Specialist Panels because they consider one content area, but their membership includes broad-gauge scientists and researchers as well as recognized experts in the specialty area. Serving on a specialists panel will require 20-30 days during the year. Panel members will serve for at least one-year periods.

An in-house support team in the Evaluation Unit will coordinate and facilitate the work of all participants in the assessment system and provide information to them. Members of the support team will report to the head of the Evaluation Unit. The team's major tasks

are developing the lists of resource personnel for both Specialist Panels and consultants, scheduling evaluation and training, monitoring special evaluation contracts, making their own reports on how the evaluation is proceeding, and suggesting alternatives to it.

The head of the Evaluation Unit will obtain critical assessment information from these panels and the support team. Although the Evaluation Unit staff will have a normative orientation necessary to the function of making recommendations on the allocation of scarce resources, the assessment system also requires that some personnel play a nurturant role in relation to institutions and programs. In-house program personnel from the line operating offices (e.g., Directed Programs, Resources, and Practices) will play this advocate role, helping to build programs and to make as good a case as possible for them during evaluations. The crucial requirement for those who fill this role is understanding the program well enough to represent it to the agency, and they are expected to supply supportive, although not necessarily uncritical, reports and information to the head of the Evaluation Unit and to the Director's Office.

Specialist Panels may not review every program every year. In some cases, when adequate data are available to preclude new assessments and a program is midway in fulfilling a multi-year program plan, only routine milestone checks will be done by technical advisors in operating offices, in collaboration with the performing contractor. If, however, these milestone checks prove unsatisfactory, or if an increase in budget is requested, the Evaluation Unit will be alerted and will call on Specialist Panels to site visit and provide information. When a program is judged to be completed, an assessment is

done by the Master Panel, again calling on Specialist Panels, and results are reported to the Director.

A special comment might be made on the advantages of a Master Panel that does not site visit. First, Site Visitors are often offered especially appealing performances by contractors. The Master Panel will not be swayed by such incidental information. Second, it is questionable that one group can adequately and directly assess the continuing requirements of some 25 current institutions and 100 ongoing programs or large projects in one year. The trade-off is that each program will be visited by one of several Specialist Panels which will report its findings to the Master Panel. The Master Panel then has the manageable task of comparing the data on all programs. Large R&D agencies administering several programs may be visited by several Specialist Panels, each of which will make incidental comments on management in addition to its primary comments on program performance. Finally, the comparative evaluation of programs will always occur, because each Specialist Panel will visit several programs in its areas of special knowledge.

V. EXTERNAL RELATIONS UNIT

An External Relations Unit will coordinate NIE activities with other Federal agencies, Congress, and professional interest groups. It will have a legislative staff, an editorial group, and a public information staff to accomplish these functions.

Coordination of activities with other Federal agencies will require information sharing with all agencies involved in educational R&D, agreements with other agencies on their missions and areas of

responsibility, joint planning and management within areas of overlapping responsibilities, exchange of personnel, and other resources among agencies participating in such joint program activities, and joint funding in areas of similar interest. During the Spring of 1972, plans delineating how the public relations staff will undertake each of these activities will be developed.

The public relations staff will also provide and solicit information from the general public and from the broad array of educational R&D workers and practitioners upon whom the success and acceptability of NIE depends. This may sometimes involve national surveys and polls, because these groups can be a valuable resource in the assessment of the country's educational needs, and identification of critical problems.

Among the most important of NIE's objectives will be that of advising policy makers on solutions to major educational problems. Until now, R&D has seldom contributed to such policy decisions, partly because its results have been formulated only for its own fraternity, and not designed for policy application. The External Relations office will design procedures to correct this condition. Its legislative staff will not only screen and respond to Congressional requests, but will seek the help of the legislators in interpreting political priorities and, working with the Unit's editorial staff, they will adapt R&D documentation so that it provides clearly written statements addressing policy issues. This will include R&D-based advice on solutions whenever it is appropriate.

This Unit may occasionally contract out some of its work, but

will primarily carry out its functions with its own personnel holding Civil Service appointments.

VI. OFFICE OF DIRECTED PROGRAMS

An Office of Directed Programs will be one of three main substantive operating units and will house those comprehensive R&D programs that aim at developing alternative solutions to help solve prominent problems requiring substantial national reform.

Programs in this Office are generally characterized by NIE initiative, planning, and direction. It will, for example, be responsible for the implementation of the research, development, and dissemination activities that were planned by the Planning Unit. The general mode of program management within this division may be characterized by such words as: positive, directed, and intrusive. The normal instrumentality will be a performance contract. Specific performance criteria, definitive schedules, management plans, and the like will normally be expected of performing organizations.

The participants and clientele served by this Office (lawyers, economists, management scientists, large R&D agencies, government planners, etc.) are likely to have a strong analytic and action orientation. Close monitoring; thorough management review; and familiarity with the contractor operation, management, and personnel will be more common than not. Program monitors will make frequent trips to contractor facilities.

The organization of the Office will be by problem oriented task forces that operate in a longitudinal rather than specialized fashion. Each task force will contain within it the capability

for carrying out what research, development, and dissimination that is needed. The task force will consist of a team of senior and junior professionals who have been transferred from the office of Problem Analysis and Program Planning, augmented by additional personnel.

The staff of each task force will have the capability and prerogative of conducting intramural as well as extramural research and development. The primary mechanisms for extramural R&D will be the contract with its specified outcomes.

The senior professionals on each task force will hold appointments exempt from Civil Service requirements. Junior professionals may either be exempt or Civil Service Temporarys. The few personnel with only administrative duties, as well as clerical personnel, would hold Civil Service appointments.

VII. OFFICE OF PRACTICES

An Office of Practices will contain programs that aim primarily at improving the art of science of teaching. The programs will be characterized by procedures that encourage planning and implementation of improvements by school systems, State departments, and other education agencies. The general purpose of this Office will be to support promising programs which experiment with current practice and evaluate, demonstrate and spread the best current practices. The programs in this Office may be comprehensive, such as those models employed in the Experimental Schools Program; or specific to one or more of the components of the educational system such as curriculum development, instructional methods, organizational change, evaluation system, etc. The participants and clientele

for this Office include teachers, school administrators, teacher educators, parents, students, and all others engaged in assisting in the operation of educational institutions.

Programs will often result from the initiative of the client, but will occasionally be a result of NIE initiative. Relationships with school systems will normally be through a non-demanding contract, and be of a supportive nature. Use of other organizations, such as evaluation contractors in the experimental schools program, may be through more demanding contractual instruments. Initiation of proposals for improving practices would come from outside agencies: Regional Laboratories, R&D Centers, School Systems, Universities, etc. The prominent activity would be development, evaluation, and demonstration supported by contracts awarded for unsolicited proposals. Evaluation of proposals would be accomplished by review panels of consultants.

VIII. OFFICE OF RESOURCE DEVELOPMENT

An Office of Resource Development will manage programs on basic research, researcher training, and institutional development. Its function will be to build and strengthen R&D capability throughout the country. These programs generally will call for either a "laissez-faire," or a "supportive" mode of program management. Support of basic research generally requires that adequate publicity be given to the areas in which the agency plans to support research. The primary program management action generally centers around the decision of which applications to support, thereafter the contractor, does not require (in fact does not want) much, if any monitoring.

The primary emphasis will be on enticing first rate scientists and bright young scholars from a wide range of disciplines to get involved in research on education-related topics.

The participants and clients of this office include university researchers from a wide range of academic disciplines, e.g., anthropologists, sociologists, psychologists, historians, etc.

Intramural Basic Research will be conducted by individuals or teams of scientists intending to add to the knowledge base in the foundations of education and learning. All the professional personnel in this Unit will be either exempt from Civil Service, or will hold temporary appointments. Little use will be made of contracts, although an extramural contract as part of a research project would be an available option. Decisions about what intramural research this Unit will conduct would be made with the approval of the head of the Office.

Extramural Basic Research would operate totally by grants and contracts outside NIE. The Unit would rely heavily on outside review panels for the evaluation and funding recommendation of proposals. Contract management and coordination of the Review Panels of outside specialists would be this group's main activities, and its staff could all hold Civil Service appointments.

The researcher-training group would operate in a similar manner to the extramural research group: awarding and maintaining contracts or fellowships, and coordinating review panels. It would be staffed with personnel holding Civil Service appointments.

The institutional development group's principal responsibility is the existing Regional Laboratories and Research and Development Centers that have not yet reached full maturity. It will award

contracts, coordinate review panels, and again be staffed with personnel holding Civil Service appointments. When a lab or center reaches maturity, it will no longer receive support from this office. The Institutional support program requires that institutions be started, brought through growing pains and be matured. This kind of program requires a "supportive" mode of management and project monitors will be far more active than above, and often fairly intrusive, but their tone should be one of helpfulness. As institutions move through the transition from immature to mature, program management will shift from supportive to more directive and the institution will do business with the Office of Directed Programs or the Office of Practices, instead of the Office of Resources.

IX. OFFICE OF ADMINISTRATIVE SERVICES

An Office of Administrative Services will be needed to provide personnel, procurement, fiscal and general services for NIE. As a separate agency, NIE will be expected to budget for their Administrative Services. This does not necessarily mean that beginning July 1, 1972, NIE must be totally self-reliant for such services. Many of these services could be efficiently and economically provided by the Office of Education, or other Federal agencies. Where appropriate, such agreements will be worked out. Furthermore, the establishment of a completely independent Administrative Services Office would require more time than remains for NIE planning. Time constraints, therefore, will also encourage NIE to seek some support services from other agencies.

Nevertheless, to operate, NIE will require certain Administrative

Support Services. The general functions to be performed are:

- Financial Management
- Personnel Administration
- Contract Management
- General Services such as facilities, maintenance, duplication, etc.

The details of each organizational unit and the main procedures that are to be used in the Office of Administrative Services are described in other documents being prepared by the Planning Unit. One feature being considered is the partial decentralization of administrative support units such as Personnel and Contracts, so that service personnel are located in each of the three operating offices. As an example, the heads of operating offices such as Directed Programs, Practices, and Resources, would have assigned to their office a Personnel Specialist and one or more Contract Specialists. The purpose of such an arrangement is to support the decentralization of administrative authority and decision-making, vesting it in the hand of those leaders who are operating programs.

SECTION THREE: PROGRAM

This section of the report will describe new programs and projects that might be initiated in FY 1973. Since program planning is an on-going activity that is not yet completed, the description that follows should be viewed as an interim report, not a final statement of program plans. The R&D activities that will be discussed represent possible lines of work rather than final commitments. The processes that the NIE Planning Unit has employed to bring these program possibilities to their present state of definition will be described below. In addition, the procedures we expect to employ to develop the program plans in fuller detail, and the criteria that will actually be implemented in FY 1973, are also described.

I. THE PROGRAM PLANNING PROCESS

The NIE Planning Unit was established in the spring of 1971. A major emphasis in the work of the Planning Unit has been, and continues to be, the planning of new R&D possibilities for the Institute. An open process, responsive to contributions from a wide variety of sources is being employed. Ideas and suggestions have been elicited from a broad range of the Institute's potential constituencies. Specifically, three activities were undertaken.

A. Disciplinary Meetings

In order to involve a wide range of disciplines and educational interest groups in the planning process, we organized a series of meetings with scholars and practitioners. The task in each group was to consider what the participants, speaking from the vantage point of the discipline or field they represented, could offer as suggested R&D activities for the NIE. The participants at each meeting discussed

the knowledge in their area of competence that is most applicable to the mission of the NIE and suggested possible programs that the Institute might undertake.

Each group met for two days, usually in Washington, D.C. Members of the NIE Planning Unit and other interested individuals attended, primarily as observers rather than active participants. The following meetings have taken place:

- Psychology
  Chairman - George Miller (Princeton University)

- Sociology
  Chairman - Burton Clark (Yale University)

- Educational Technology
  Chairman - John Truxal (Polytechnical Institute of Brooklyn)

- Anthropology
  Chairman - John Whiting (Harvard University)

- Classroom Craftsmen
  Chairman - William McConnell (Webster College)

- Representatives of the National Education Association
  Chairman - William Morrison (President NEA)

- Curriculum Research and Development
  Chairman - Wade Robinson (Central Midwestern Regional Educational Laboratory)

- Educational Publishers
  Chairman - Robert Follett (Follett Publishing Company)

- Deans of Schools of Education
  Chairman - Ted Cyphert (University of Virginia)

- Reading
  Chairman - Harry Levin (Cornell University)

An additional meeting is scheduled in January 1972:

- Measurement and Evaluation
  Chairman - Samuel Messick (Educational Testing Service)

After each meeting the Chairman prepares a paper summarizing the suggestions of the participants. Although these papers are prepared

for the NIE Planning Unit, they are circulated within the field for additional comments and suggestions. At the present time, summary papers are available from the meetings of psychologists, sociologists, and educational technologists.

During the next few months, an additional series of meetings is planned, some of which will bring together some of the participants in earlier meetings for interdisciplinary discussion.

B. Commissioned Papers

In order to focus directly on major program possibilities for the NIE, three papers were commissioned:

- Community Participation in Education

  by Polly Greenberg

- A Culturally-Based Education System for the Disadvantaged

  by Joan C. Baratz

- Open-Informal Education: Recommendations for Research and Development

  by Lillian G. Katz

Each of these papers defines a major problem area in American education and clarifies the knowledge base from which potential solutions may be expected to emerge. The status of R&D work currently underway is surveyed and suggestions for additional work are presented.

C. Planning Documents

In a preliminary study of the proposed National Institute of Education, Roger E. Levien tentatively defined three problem areas that warranted careful study:

- The inadequate education received by the poor and disadvantaged,
- The inadequate quality of the education received even by those from more affluent backgrounds, and

- The need to use education's limited resources more effectively.

Though Levien pointed out that these problem areas were not based on a comprehensive analysis of the American educational system, it is obvious that they are sources of acute concern to educators and laymen alike. As such, they were used as foci for eliciting suggestions for R&D program possibilities.

Each of the three problem areas was first examined by the Planning Unit in order to isolate salient issues as sharply as possible. An outline for each area was subsequently developed in which the scope of a problem-oriented inquiry was specified.

Subsequently, we contracted with several outside groups to examine the problem areas and to prepare documents containing their analyses. The following groups participated:

- In the area of the education of the poor .....

  a group at the University of Illinois headed by Prof. Frederick A. Rodgers produced a report entitled A Program Development Document to Improve the Quality of Education for the Disadvantaged.

- In the area of the quality of education .....

  a group drawn from several universities headed by Prof. Robert Davis of Syracuse University produced a report entitled Program Proposals for Improving the Quality of Educational Experiences.

- In the area of the effective use of educational resources .....

  three groups worked separately ....

  ...at the University of California (Berkeley) a group headed by Prof. Charles S. Benson produced a report entitled Research Priorities for R&D Projects in the Economics of Education.

  ...at the University of Colorado a group headed by Profs. Larry D. Singell, Nicholas W. Schrock, and Wesley J. Yordan produced a report entitled The Problem of Obtaining and Using Resources in Education: Some Proposed Programs for Purposive Change.

> ...at the University of Chicago and other universities a group headed by Prof. Mary Jean Bowman produced a report entitled Educational Outcomes, Processes, and Decisions: Frontiers of Economic Research and Development for the 1970's.

As part of its analysis, each group was asked to

- define the major educational problems in the area under its consideration,
- examine past and current R&D efforts addressed to these problems, and
- suggest promising new lines of R&D work which the Institute might consider.

The documents were replete with ideas and proved to be rich sources of suggestions for R&D work in education.

As noted above, program planning is a continuing process. On the basis of the disciplinary meetings, commissioned papers, and planning documents, we have formulated tentative plans for addressing some of the major problems of American education. The work continues, however, and in a later section of this report, the procedures we expect to follow in developing highly detailed and specific program plans will be discussed.

II. PROBLEMS TO WHICH THE NEW PROGRAMS ARE ADDRESSED

The immense complexity of the American educational system and the diverse but critical functions it fulfills in American society make it extraordinarily difficult to evaluate its impact in a comprehensive way. In addition, the close relationship between the institutionalized arrangements for providing educational services and the larger society thereby served complicates any attempt to examine a particular aspect of the system in isolation. In a real sense, every society gets the educational system it deserves - or perhaps unconsciously desires. If American education is beset by problems, and there can be no doubt

that it is, it is important to recognize that these are not simply failures of the schools. Not all education takes place in schools, and schools, to the extent that they fail to meet societal expectations and needs, may reflect structural and functional inadequacies of the larger society. A realistic analysis of the problems of American education cannot be separated from an examination of the problems of American society. In the same manner, any attempt to introduce significant reforms in American education will necessarily impact upon American society in significant, and sometimes painful, ways.

That American education is in serious trouble is a fact beyond dispute, although different interest groups may prefer to emphasize different causes and, of course, different cures. Dissatisfaction with the educational system has reached unprecedented levels, and it has become quite fashionable to speak of a crisis in the classroom. Yet the American experiment in mass education cannot unequivocally be judged a failure. Soon after the nation was founded, and continuing until today, public education was extended to more people for a longer period of time than any other nation had done before or has done since. To provide as much education for as many people as possible has been, for more than one hundred and fifty years, a distinctively American goal. To realize this goal the nation has made - and continues to make - enormous investments in the educational system. As a consequence of these societal investments in education, the system can boast some striking successes:

- There has been a steady increase in the number of students at all levels.
- The retention of students by the schools has improved significantly.

- There is some evidence, mostly indirect to be sure, that the quality of education has improved.

- The typical teacher and school administrator has a greater amount of formal academic preparation.

- Education has made striking contributions to national growth and individual productivity.

- Education has contributed significantly to the reduction of poverty.

Clearly, the picture is not all bad; in important ways the American educational system has served the nation well.

Yet, in the face of these remarkable accomplishments, it is incontrovertible that American education has reached a point of crisis. The signs of dissatisfaction are widespread and the desire for reform is reflected in numerous ways. To cite only a few examples:

- Although the taxpayer's revolt is most apparent at the local level where more and more school bond elections are disapproved, there is increasing resistance to school support at all levels of government.

- There is a growing concern on the part of parents that their children are receiving an inadequate education, and in the inner-city ghettos parents are demanding decentralized community control of their local schools.

- There has been a marked increase in student protest and student-initiated efforts at school reform, most publicized at the college level but also to be found in the high schools as well.

- There has been an increasing, and often stressful, public awareness, beginning with the 1954 Supreme Court decision declaring racially-segregated schools unconstitutional, that the public schools may not reinforce local customs that deny equal educational opportunity to minority-group children.

- There has been a marked increase in the number of books and articles in the popular press that portray the schools as little more than prisons and schooling as a nightmare experience that destroys the spirit of the child.

Thus, in the face of success, the educational system encounters mounting evidence that parents, students, lay citizens, writers, and government officials are dissatisfied with its performance.

We have examined some of the factors that might account for this apparent paradox. Why is it that the American educational system can no longer meet the expectations of large segments of society? The answer to this question will depend, of course, upon the perspective one chooses to adopt; not everyone will define the causes of our educational malaise in the same terms. The factors that contribute to the current crisis are numerous and complex, and there is room for honest disagreement. We believe, however, that the factors to be discussed below are basic.

A. The Educational System has been Technologically Non-Progressive

The cost of producing any goods or services in the economy is dependent upon the price and amount of the inputs required for each level of output. Increasing output while maintaining or reducing input comes about primarily through the application of technology. Thus, technological progress has played a central role in raising the American standard of living because it has resulted in more and better goods and services while maintaining or reducing the quantity of resources employed in the process. Although education has made significant contributions to this increase in productivity in the economy, the educational system itself has been slow to adopt technological innovations. As a consequence, growth in educational expenditures have risen far faster than growth in the economy as a whole. In the last decade, for example, while the Gross National Product was averaging a 6.8% annual increase, expenditures for education averaged a 9.7% annual growth. To raise the revenues required by these increasing educational expenditures has required increasing effort on the part of taxpayers. We have apparently reached the point where large numbers of taxpayers are simply unwilling to continue this process. Although there are many factors that can account for the technologically non-progressive character of the educational system (e.g., all of the service, labor-intensive industries tend to share this characteristic), the need for change is obvious.

B. The Distribution of Fiscal Resources is Inequitable

One of this country's proudest claims is that all citizens enjoy equal treatment in the distribution of public goods and services. Nowhere, however, is the disparity between what we profess and what we actually do more obvious than in the way we allocate funds for the support of the public schools. The statistics of school finance clearly demonstrate that in poor, high-density school districts per pupil expenditures tend to be far lower than in more affluent districts. To the extent that a child's education depends upon the amount of

money allocated to it, the poor child is clearly being short-changed. His education is dependent not on his needs but on the wealth of the community in which he resides and ultimately the ability of his parents to pay taxes. In a landmark decision, the California Supreme Court decided on August 30, 1971 in Serrano vs. Priest that the state's system of school financing is unconstitutional under the equal protection clause of the Fourteenth Amendment. Similar decisions have been reached in Minnesota and most recently in Texas. If these decisions are upheld in the U.S. Supreme Court, we can probably expect major legislation to revise the methods for allocating funds to the schools. Clearly the methods currently in use do not produce equity, but how it can be achieved, and how it can be coupled with other needed educational reforms remain unresolved problems.

C. The Schools are Isolated from the Mainstreams of Life and Scholarship

With the rise of modern industrialized societies, institutions were created to deal with the highly specialized functions that make such societies viable. Thus, schools were created to take over many of the educational functions that formerly were performed by the family. Typically, schooling takes place in settings that are physically separated from the home and community; schools are staffed by specialists who assume the distinctive role of providing instruction for the young. Although this separation of the schools from the outside world may be justified in the interest of organizational efficiency, it is possible that what begins as separation gradually becomes isolation. There are many reasons to believe that this has occurred in many American schools. Sensitive observers have noted:

- the irrelevance and inappropriateness of much that is taught in the schools,
- the inability of the schools to provide leadership in reorganizing the knowledge they transmit,
- the limited understanding many teachers have of the basic subject matter with which they deal,
- the generally low levels of scholarship and competence which the schools employ as standards for teachers and students,
- the failure of the schools adequately to prepare students for employment,
- the often arbitrary and non-functional rules that students are required to follow,
- the inability of the schools to make effective use of community resources in establishing the instructional program,
- the tendency of the schools to base practice on custom rather than evidence of demonstrated success.

The picture that emerges from an examination of these characteristics is of a self-contained institution that has become isolated from the society it is supposed to serve and from the knowledge it is supposed to transmit. The result is to immerse young people in a school culture that deals in a superficial way with largely trivial matters - above all in a culture that lacks authenticity.

D. The American Educational System has become Non-Responsive and Non-Adaptable

In contemporary industrialized societies the institutional arrangements for providing needed human services have tended, almost inevitably, to become heavily bureaucratic. Rules and regulations assume more importance than the human purposes they supposedly serve; power and authority inhere in formally defined, hierarchically organized positions in which demonstrated merit and ability are relatively trivial considerations; individual initiative, spontaneity, and inventiveness become crowded out by a preoccupation with the maintenance of organizational stability.

The American educational system, like most big enterprises, has not escaped this trend toward bureaucratization. In the typical school system, there is an unmistakable emphasis on written rules, formal criteria, role relationships, defined responsibilities, and the professionalization of work.

To a great extent, this tendency toward bureaucratization merely reflects the facts of life in a mass society. Many of the tasks involved in serving a large clientele must be repeated again and again. An organization equipped to perform these tasks automatically and efficiently must tend to become bureaucratic.

There is nothing necessarily pathological in this development. Problems do arise, however, especially insofar as organizational purposes drift toward self-maintenance and away from client service.

In many ways this appears to have happened to the American educational system.

- At each echelon of authority -- teachers, principals, and superintendents -- there is more concern with pleasing supervisors than achieving some larger, more legitimate educational purpose.

- The system generates and effectively publicizes only a limited amount of information that can be used to judge its performance.

- Throughout the system there is an inordinate concern for docility, order, and control.

- Following proper procedure, going through channels, and defending the established order of doing business have become ends in their own right, and more important than getting a needed job done creatively with deep personal commitment.

- the adoption of innovative practices is too slow and uncertain to keep pace with the needs of a rapidly changing society.

The picture of American education that emerges is of a system that is unable to re-new itself by responding rapidly, confidently, and openly to diverse client needs and expectations.

E. The American Educational System Provides Too Few Opportunities for Fruitful Involvement for Concerned Parents and Citizen Groups

An especially unfortunate feature of the non-responsiveness described above is the large school system's inability to provide students and parents with opportunities for genuine involvement in decision-making affairs. The decade of the sixties, in particular, was characterized by trends toward centralization in education. This attempt to gain economics of scale through merging and consolidating school districts, while often resulting in greater efficiency and cost effectiveness, has nevertheless generated some undesirable side effects. On a significant scale across the nation students and parents have come to believe that they, as individuals or as members of small local groups, have little or no part to play in determining the kind and amount of education they desire. Some of the causes underlying this feeling of powerlessness are highly visible.

- The increased standardization which accompanies centralization reflects a society's reliance on the educational system for cultural homogenization. This phenomenon may have been useful historically, but a monolithic culture is now neither desirable nor possible. Practices which do not accommodate both cultural and individual differences can no longer be considered viable methods for educating the young or the old in our society.

- As a result of the tendency for large established institutions to grow complacent with time, centralized school systems have not typically kept up with changing client needs. Students who must learn the coping and adapting skills needed in tomorrow's world are increasingly critical of institutions which seem to place the needs of the system above those of the clients.

- In centralized systems, professionals at the top tend to make the major decisions. This practice is particularly lamentable in education, where clients have little choice about matters which have important implications for their future lives and well-being. But as school districts become increasingly large and complex, there is more and more a tendency on the part of school boards and parents, who lack professional credentials, to abdicate decision-making responsibility and to let matters be decided by the superintendent and his professional staff.

  Feeling powerless in the face of a large, complex, and unresponsive system, some parents have chosen to accept a passive role but others, in increasing numbers, are challenging the system and demanding a genuine voice in decision-making.

F. There is Widespread Academic Retardation in the Schools that Serve the Poor

Earlier we noted that inputs of resources were inequitably distributed in the educational system with the poor receiving far less than they need. In like manner, all conventional measures of output show that the poor learn less in the system. The evidence here comes largely from data on school dropouts and standardized tests in the inner-city schools, and is too well known to require extensive documentation. These data reveal a pattern of progressively more severe retardation the longer the child remains in school. In reading, for example, the typical black child in the inner-city is likely to be almost one grade below the national norm when he is in the second grade. By the time he is in the fifth grade, he is likely to be nearly two grades below the national norm. In the eighth grade, his retardation is likely to be between two and three grade levels. In other subject areas, such as arithmetic, standardized tests reveal a similar, though often less severe, pattern. Thus, cumulative, progressive retardation is the fate of large numbers of minority-group children.

It is possible to argue that the tests that reveal these deficiencies are themselves imperfect instruments - unreliable, invalid, or biased. It is also possible to argue that the schools place an inappropriate emphasis on reading, expecting levels of skill not required in most jobs and not used by most adults. These arguments, however, will not satisfy most minority-group parents who observe the corrosive effects of this retardation in their children. Perhaps as much as any other factor, the inability of the schools to teach poor children has inspired the demand for decentralization and community control.

The problems described above are not mutually exclusive. Since the educational system involves an intricate and delicately balanced network of relationships, it is easy to see, for example, that the technologically non-progressive nature of the system is intimately tied to its non-adaptiveness and non-responsiveness. So too, the widespread retardation in the schools attended by the poor is not unrelated to the inequitable distribution of fiscal resources. If the problems are not mutually exclusive, they are also not an exhaustive listing. No doubt other analyses would emphasize other problems, some of which we regard as less significant. We do contend, however, that these problems are of central significance. They are more than

symptoms; they are at the root of the pervasive sense that the educational system is in deep trouble.

Moreover, these problems are of more than transitory significance. To address them effectively will require major reforms in American education. In the future, the shape of these problems will no doubt be changed by the complex interplay of political, social, and economic forces now at work in society. Research and development is not the only force that can or will stimulate the needed reforms. We believe, however, that R&D has an important role to play in pointing the way toward those reforms which have the greatest chance of redesigning the educational system and making it truly adequate to the needs of society. Accordingly, the program plans the NIE eventually adopts must be measured against their potential for making a significant impact upon these problems.

III. A UNIFYING THEME FOR THE NIE'S NEW R&D ACTIVITIES

The need for educational reform is based largely on the recognition that the procedures we use to educate are not nearly so varied or diverse as a complex, pluralistic society requires. The American educational system is derived from a single model which in its local manifestations is more often characterized by sameness than diversity. Throughout the United States, notwithstanding superficial differences, schools assume very similar forms and employ very similar practices. Although all of the problems of American education, as described above, are not necessarily due to this absence of diversity, it is unlikely that they can be addressed successfully unless greater diversity is created. Accordingly, we propose as a general, unifying theme for the new programs now being planned: the cultivation of

educational alternatives. The comprehensive reforms that are required if American education is to be fundamentally re-shaped will necessarily entail the creation of a broader range of educational alternatives than are now available.

The reasons for cultivating a greater range of educational alternatives are numerous and compelling:

- Neither parents nor students agree on what schools should try to accomplish or how they should go about it. Alternative patterns of schooling are needed to accommodate differences in client goals and expectations.

- If students want different kinds of schools, it is also true that they need them. Different students have different needs, different patterns of abilities, and different responses to any specific experience. Present schools are unable to match student differences with appropriately differentiated educational opportunities.

- Schools are far more successful when they have enthusiastic student and parent support and the cooperation of the general community. Consumers are more satisfied when they have a choice among different versions of products with fundamentally similar purposes. Providing a choice among alternative educational opportunities is thus a good marketing strategy for obtaining eager consumer support.

- The possible effectiveness of educational alternatives cannot be known in advance or in the absence of scientific study. Since the effects of differences cannot be studied until those differences exist, the creation of educational alternatives is a prerequisite to scientific study.

- Our present schools are buffeted by conflicting demands. Making marginal, rather than fundamental, differentiations in educational practice to accommodate these demands, they have failed to satisfy many of the diverse interest groups in American society. A sounder engineering principle would dictate the creation of alternative patterns of education that meet specific client interests and requirements.

- The survival of the educational system is jeopardized precisely to the extent that diversity is lacking. Alternative forms of education may be viewed as an evolutionary safeguard. Since many aspects of the future are largely unpredictable (only rapid and constant change seems assured), a generous supply of alternative patterns is needed to discover those that have the highest survival value.

In building diversity, it will probably be necessary to distinguish different paradigms of educational goals and practices. The teacher education program, the curriculum materials, the physical facilities, the daily and weekly schedule that work well for one kind of education will almost certainly not work as well for another, basically different, kind of education. Thus, we will have to replace the notion of "what is best" by the quite different notion of "what is best for this particular educational alternative." To accomplish most of the important tasks in education, there are probably no ways that are unambiguously best of all. Instead educational practices are of differential effectiveness depending upon the contexts in which they are employed and the purposes they are expected to serve. In cultivating a richer and more varied group of educational alternatives, there must be an explicit recognition that all educational practices cannot be evaluated against a single, common standard.

IV. A PROPOSED MODEL FOR NIE'S NEW R&D ACTIVITIES

In attempting to formulate plans for possible new R&D activities, we first developed an explicit model as a framework for our efforts. This model was based upon an analysis of ideas developed in the disciplinary meetings, commissioned papers, and planning documents, as well as those ideas generated internally within the Planning Unit. Since many essentially similar suggestions appeared in different guises and in different sources, the task was, at least in part, to organize a coherent model for structuring the planning of programs. This model may be represented as a two-dimensional matrix as in the figure below.

Figure 1

A MODEL FOR PROGRAM PLANNING

Manipulable Conditions	Program Foci			
	Access	Decision-Making	Productivity	Substance
Incentives Information Sanctions Agents	Directed Programs 1 and 2	Directed Programs 3 and 4	Directed Programs 5 and 6	Directed Programs 7 and 8
Program Goals	Equitable Access	Local Community Involvement	Increased Productivity	Authentic Learning Experiences

The model distinguishes two different analytic dimensions: manipulable conditions and program foci. As the figure shows, under manipulable conditions, four factors have been distinguished: Incentives, Information, Sanctions, and Agents. The figure also indicates four different program foci: Access, Decision-Making, Productivity, and Substance. Plans are being developed for eight new directed programs, two of which are derived from and respond to each particular program focus. A preliminary description of these programs is presented below. The general goals for these directed programs are to develop alternative methods for achieving: Equitable Access, Local Community Involvement, Increased Productivity, and Authentic Learning Experiences.

In general, the manipulable conditions represent dynamic aspects of the educational system. They are described as "manipulable" since they are not static conditions, but are instead subject to modification

under certain circumstances. We take the position that any program that proposes to effect a major change in the educational system must invest a substantial effort to modify these four conditions.

Incentives are defined by the distribution of rewards and punishments that guide the behavior of students, parents, teachers, administrators, and taxpayers. Each of these groups is subject to different incentive conditions, and the performance of each vis-a-vis the educational system can be modified substantially only if these incentive conditions can be changed.

Information is defined as the flow of factual data relevant to the status of the educational system and the performance of its constituents, i.e., pupils, schools, districts, products, etc. Reform of the educational system will require substantial modifications in the quantity and quality of information available to those who must pay for, receive, provide, and guide the development of educational services.

Sanctions are defined partly by legislative actions and judicial decisions by Federal, State, and local authorities, but also by those administrative regulations that assume the character of legal requirements. Since present educational arrangements are intimately tied to a network of legal obligations and responsibilities, major modifications of the educational system often cannot be undertaken unless there has been enabling legislation or until legal and administrative barriers have been removed.

Agents are defined by the mechanisms that mediate educational processes. Included here are individuals, media, and materials that function to transmit and channel instruction to students. Clearly, these agents determine how education is packaged and delivered. If

education is to be reformed in fundamental ways, new agents may have to be created and old agents may be required to assume new roles.

Most of the recent attempts and proposals addressed to educational reform are derived from one or more of these four factors. Performance contracting and merit pay are primarily attempts to modify incentive conditions. National assessment and the creation of the ERIC system are focused on the development and dissemination of information. The passage of the NDEA and the ESEA and the decisions of the U.S. Supreme Court and other state courts regarding school segregation and finance are examples of how sanctions may be used to alter the educational system. Sesame Street and team teaching are illustrations of how agents can be changed or used in new ways.

The program foci represent areas of potential R&D activity in which the Planning Unit is developing new program plans. These program plans are being formulated "vertically" rather than "horizontally" since the problems to be solved rather than the factors to be manipulated are the focus of concern. The goal of each program is to make a contribution toward the solution of a significant educational problem through the modification of incentives, information, sanctions, and agents. Thus, the manipulable conditions are regarded as factors that must be modified in the educational system in order to reach the objectives of each program. Although, in effect, each program can be defined by the pattern of modifications in the incentive structure, information flow, legal sanctions, and agents it proposes to establish, the focus of the programs is not on these modifications as ends in themselves.

Access is concerned with the extension of opportunities for individuals - not necessarily those of school-age alone - to receive needed educational services while insuring that the distribution of these services is equitable. As a program focus it responds primarily to the problems of inequity in the distribution of fiscal resources and the non-responsiveness of the educational system as it is now organized.

Decision-Making is concerned with establishing mechanisms that provide a greater opportunity for the consumers of educational services (i.e., students, their parents, and local citizen groups) to participate in educational decision-making. This program area responds primarily to the problems of the inability of the educational system to involve concerned client groups and to the widespread academic retardation in the inner-city schools.

Productivity is concerned with the need to maintain a reasonable and acceptable balance between outputs (defined by the cognitive and affective characteristics of students) and inputs (defined by the resources expended to reach any given level of output). The focus on productivity responds primarily to the problems presented by the educational system's failure to use technology effectively and its non-adaptability.

Substance is concerned with the need to develop, within the educational system, a broader range of authentic educational experiences. Although the primary emphasis here is on the overt curriculum - making it more relevant to a heterogeneous, rapidly changing society - there is also concern for the implicit, hidden curriculum which is often more important in determining what and how a student learns. This program focus responds primarily to the problem of the isolation of the schools from the mainstreams of life and scholarship.

V. PROPOSED NEW PROGRAMS

In this section, eight new program possibilities - two for each program focus - will be described. The programs are presented in general terms with only a minimum of concrete detail. Questions of cost, feasibility, and potential benefits have not been systematically examined, although there are plans to do so (see Next Steps below). Each description should therefore be regarded as only an illustration of a possible program that might be implemented by NIE. However, at this point in the planning process, the programs must be considered preliminary and tentative formulations rather than our final thinking.

PROGRAM I - A PROGRAM IN THE AREA OF ACCESS: ADJUSTING INEQUITIES IN EDUCATIONAL SPENDING

This is a proposal for NIE to develop workable procedures to implement fiscal equalization plans in education. Such plans are now in the process of being mandated by the courts, authorized by legislation, and studied by State commissions all over the country. The following statement attempts to show that the problem of inequity has been well documented, the technical task of developing formulas or models to redistribute funds is underway, and the judicial and legislative groundwork for change is already being established. The appropriate step in July 1972, when NIE becomes operational, is most likely to be implementation--the knotty problems of matching varied proposals for solution to specific circumstances in each State, and of gaining the acceptance and cooperation of citizens who may have to spend less on their own children and more on the children of the poor in order to achieve equity.

A. Specific Objectives:

The problem of creating public awareness and willingness to do things differently once a goal has been changed, has seldom been addressed by educational R&D. The current fiscal situation not only poses a problem to be solved, but also provides a vehicle for study of such public behavior change. In keeping with the problem and the opportunity for study, we propose the following objectives for this program:

- To define the most well-developed formulas for equalization so that they can be treated as planned variations in wide-scale reform.

- To work closely with several States in developing the formula variation most suited to their circumstances, specifying a series of changes that incrementally move their current system to the proposed reform.

- To develop and try out information programs at each site that will lead to knowledgeable public decisions concerning the proposed fiscal change.

- To try out the proposed fiscal changes and information programs, collecting evaluation data so that the reform variation can be treated as experiments.

- To disseminate generalizable elements of the program.

B. Current Status of Equalization Programs:

In our country, more public tax money is spent, per student, to educate the children of the wealthy than the children of the poor. This happens because levels of school spending are largely determined by how much local property tax a district can collect. Private Wealth and Public Education, by Coons, Clune, and Sugarman (2) not only documents this difference in spending, but also shows that student achievement is often directly related to district per-pupil spending, and inversely related to tax funds that are available. They consider this problem to be a serious violation of the Fourteenth Amendment to the Constitution, based on the principle that the equality of education may not be a function of wealth other than the total wealth of the State. Courts in three States -- California, Minnesota, and Texas -- have accepted this principle and declared that the local property tax base of school support is not legal. The courts have not, however, devised workable solutions.

These court rulings are not the first calls for reform. Tax changes have often been proposed and adopted to equalize funds available for education from district to district. Almost every

State has some plan for equalization, but except for Hawaii where the State centrally administers the school system, no plan is completely effective. The most common type of equalization is the foundation plan. In the simplest form of this plan, the State establishes a dollar level (foundation) of spending -- say $500 per pupil -- which is guaranteed to every district if they tax themselves at a certain rate (i.e., 1% or more). If the funds raised do not provide the established foundation, the State pays the difference as a subsidy. At its own option, a district may tax itself above the rate required to receive the foundation, and rich districts typically do so, providing much more money for their children's education. Thus the foundation plan provides a floor level on per-pupil expenditures, but the amounts provided are often so low that they are not a significant force in equalizing.

Simple foundation plans are the exception rather than the role; finance structures in the various States are almost always a complicated combination of foundations, flat grants, varying local shares, and Federal grants that are usually provided in the form of categorical aid. These State-to-State variations, which would make significant general reform complicated, have been well documented by the National Education Finance Project (NEFP). The project staff devised a formula to rate the equalizing power of State plans. Plans with the lowest conceivable equalizing power would provide either no State funds or simply a flat grant to every district. Per-pupil flat grants from States to districts would have somewhat more equalizing power, followed by plans where pupils in each district are weighted according

to costs of educating them, and grants are made on the basis of those weights. (For example, a vocational student might have a weighted score of 2, a kindergarten student 1.5, and a third grade student 1.) A higher level of equalization comes when, even without weighting pupils differently, a required local share in proportion to the tax-paying ability of the district is deducted for State redistribution before the apportionment is made. Finally, the greatest equalization occurs when this ability-to-pay factor is combined with apportionment on the basis of weighted pupils. Each State finance mechanism was defined by NEFP according to these levels and assigned a score. No two scores are alike, making generalizations about needed changes very difficult. The highest possible equalization rating of 8.4 was received only by Hawaii, and the lowest score of 2.295 was received by Connecticut. The median score was about 5.1. In States with medium and low equalization ratings, some school districts spend three times as much as others on each pupil.

Clearly the problem of inequity in spending is well-documented, but one more link must be considered. It seems an understatement to say that differences of 300% in spending are likely to affect educational quality. Nevertheless, this link of quality and expenditure should be established before policy-makers embark on an equalization program. Several studies have examined this problem. A recent and thorough study was done by Guthrie, et. al., Schools and Inequality (3). They made a careful analysis of data from the State of Michigan, showing that when schools receive more money, their pupils get a higher quality of education, have better job opportunities, higher

personal income, and more social mobility.

Not only has the problem been documented, but a number of solutions have been proposed. As one example, Coons, Clune, and Sugarman propose a District Power Equalizing (DPE) scheme where each district chooses a rate of taxation it is willing to accept, and each tax rate -- regardless of the number of dollars it produces in a given district -- has a pre-established per-pupil expenditure associated with it. When the taxes raised by a poor district do not reach the amount required by the assigned per-pupil expenditure, the State provides a subsidy to meet that expenditure. Thus, the per-pupil expenditures increase regularly with willingness to tax, even in poor districts.

The DPE model attempts to grant fiscal reform on the existing inefficient configuration of school districts, possibly assuming that this configuration is too difficult to change. Other equalizing models question this approach. The NEFP developed a computer simulation that can manipulate many combinations of Federal, State, and local support in alternative models of finance. Their simulation prototype, however, was based on a model State with a relatively efficient district organization because of the difficulty in developing "a finance plan which is equitable to the children and also equitable to the taxpayers in a State with inefficient small school districts gerrymandered so as to sequester wealth and to disequalize educational opportunity." (NEFP, vol. 5, p. 266) Guthrie, et. al., would overcome this problem by shifting State support from school districts to individual schools, making the school the unit for equalization, instead of the district. These and other formulas are fairly well developed, but need clearer

specification and application to the varied kinds of real settings that exist.

Administrative and legal support, so necessary to get authorization for the kinds of technical changes described above, is being developed all over the country. At least thirty States are considering changes in their complicated finance systems. For example, California is contracting with experts to devise needed changes that will satisfy its recent court ruling against the local property tax. In New York a commission is just completing its study and recommendations for changes for the State. Illinois is just now forming such a commission. Even cities are involved, with special studies stimulated by law suits in places like Washington, D.C. and Detroit.

Federal interest and participation in reform measures is probably reaching a peak now also. In addition to support for NEFP, the President's Commission on School Finance has been supported for over a year, and is expected to publish recommendations sometime in March or April. Newspapers have already announced the possibility of President Nixon's proposing a value-added (or national sales) tax to help municipalities pay for schools and other services. Finally, the pending Higher Education Act authorizes further study of the finance problem.

Though the problem recognition, development of technical solutions, and administrative and legislative support described above are being accomplished and are very important, they alone cannot solve the fiscal problem. Workable procedures must yet be developed for

implementing needed fiscal changes in a public setting, and those procedures must accommodate individual circumstances in many different places. This most critical and timely step requires both research and development, and is the objective for the proposed program described below.

C. The Proposed Plan:

The following elements would be involved in the proposed plan:

1. In every case, care would be taken to build upon, rather than duplicate, the extensive work already under way in this field. The staff would regularly exchange information with the informal but broad network of individuals and agencies involved in the area.

2. During the Spring of 1972, proposed equalization formulas would be carefully defined, including identification of true costs, legal barriers, and implementation steps, so that these proposals could be treated as feasible planned variations in change.

3. Existing systems and possible changes would also be defined. Descriptions of each State's finance mechanisms are probably available from earlier studies, and USOE staff members have been monitoring more recent action.

4. In July 1972, when NIE becomes operational, a few States might be selected for in-depth case study and development of one of the formulas as a planned variation in change. Selection could be a function of how prototypic the State is, its willingness to accept an NIE staff study, its apparent readiness for change, or any combination of these factors. Readiness for change could be judged informally by data on the existence of court cases, pending legislation, citizens commissions, apparent public dissatisfaction, or unique economic conditions.

5. The carefully developed solutions could be matched or adapted to specific sites where case studies have been undertaken. Plans for

implementation and evaluation would have to be developed.

6. Public information programs would be designed so that citizens at each experimental site could be reached -- whether they watch TV, listen to the radio, or read newspapers. Content would concern fiscal characteristics of the schools, present finance mechanisms, and proposed changes.

7. At each step of the program, generalizable elements would be reported, such as:

   - the feasibility of existing equalization proposals when applied to real settings;

   - legal and administrative changes needed to implement equalization plans (e.g., reduction of district size, selection of a new unit of State support, reallocation of Federal funds received by the State, etc.);

   - incentives that might encourage State adoption of equalization plans before court cases force the issue (e.g., technical help in devising the plan, or transition support from Federal sources for adopting new plans);

   - degrees of change that are publicly acceptable (e.g., using Federal or State funds to raise the floor of support in poor districts without subtracting from locally-raised support in rich districts).

8. By the end of FY 1973, experimental sites should be ready for implementation of solutions that have been devised. NIE would continue helping those sites make changes and collect evaluation data during 1974 and 1975 with formal reports and recommendations to follow.

PROGRAM 2 - A PROGRAM IN THE AREA OF ACCESS: PROVIDING EDUCATIONAL SERVICES FOR POORLY SERVED CLIENTS

American education has well-designed systems for the clients it serves, the young who attend elementary, secondary and college level schooling. They, however, are only a third of the population in the U.S. Among the other two-thirds are audiences for whom the creation of new educational systems is probably desirable.

1. Preschool children: Research on early education has had a high priority in the educational research effort in the past, and the interest in such projects as Head Start and other preschool child development and day care programs makes it certain that the NIE will have a role in research, development and demonstration in early education.

2. Adolescent "drop-outs" and "push-outs:" Many youngsters cannot or will not adapt to the present educational framework, yet to leave these youth uneducated and alienated is to risk high social costs in unemployment, crime and undeveloped human potential. The NIE must be concerned with developing opportunities for providing instruction at unconventional sites such as community centers, jobs, homes, and libraries; with the exploration of apprenticeship possibilities; and with the creation of second chance education for these youths.

3. Adults desiring career education: Included in this group are individuals kept from advancement by lack of training; skilled and professional workers in obsolescent occupations; individuals who have changed their interests and wish to enter different careers; and parents--particularly women--who have taken time out, or have been part-time workers during their child-rearing years.

4. Adult sub-groups with identifiable educational needs: Examples in this group are: parents who need help with understanding and satisfying the educational, social and health needs of their children; adults who wish to enrich their leisure time activities; citizens wishing to understand more about social institutions such as the judicial system, the tax structures, or other aspects of government or social life.

5. The institutionalized: The hospitalized and bed-ridden represent an audience whose lives could be enriched, and whose contribution to society might be enhanced through education. The imprisoned criminal population is in need of large-scale educational services, from basic literacy to high school equivalency. All need effective programs to change their attitudes so they can fit into society.

6. Older people: There is at present no educational system to aid older citizens in making the transition from work to retirement, and hardly any educational programs to help the retired become self-sufficient, financially, physically, and psychologically, according to the recent White House Conference on Aging.

These audiences total well over ten million people, and it is clearly impossible for the NIE to develop programs for all of them. Sample or pilot programs suitable to some groups should, however, be within the NIE's capability.

An early NIE task, therefore, should be to survey possible educational research and development tasks suitable to each new potential audience in order to assess the work needed, the costs involved, the probable payoffs, and other relevant factors.

Though not all educational services for new audiences are of equal importance, nevertheless strict cost-benefit estimates cannot be the sole source of judgment for NIE priorities. Education for old people, for instance, may not promise a high yield to the economy in increased productivity (though it may reduce social costs), but it may nevertheless be a high priority for the NIE, both because other agencies are not confronting the problem, and because of society's ethical commitment to this group.

Cost-benefit analysis is a powerful tool for guiding decisions about types of educational projects aimed at similar audiences. Preliminary NIE planning, therefore, should apply cost-benefit criteria within but not among categories of audiences to be served by new educational developments.

A. Specific Objectives in Each Category.

For each audience judged to be a priority group for new educational services, the NIE's objectives might include:

- the development of pilot versions of educational services for that client group, and the wide dissemination of information about those pilot projects.

- budgetary research to inform state and local authorities and other Federal agencies on the costs and benefits of the provision of the proposed new educational services, e.g., education for old people would be of interest to the Administration on Aging, and the NIE would design its research to provide policy-relevant data to the AOA.

- incremental development of projects to meet specific client needs with evaluation of the effectiveness of the services as provided by such projects.

B. Examples of Educational Programs for New Clients

1. Parent Education: Extensive work in Head Start and Project Follow Through, as well as research by such authorities as Benjamin Bloom, Susan Gray, Burton White, Earl Shaefer, and others has indicated the value of educational programs for parents in increasing the cognitive achievement of their children. At the same time, there are increasing demands by parents and parents-to-be for education in areas where they feel unprepared: nutrition, pre-natal and post-natal care of children, child-rearing, consumer education, information about ways of participating in the education of the child, and perhaps interpersonal relations. In addition to these, there are kinds of knowledge which the society may wish to make available to parents or parents-to-be, such as birth control information, alternatives to conventional sex-role stereotypes, or employment counseling.

To the extent that preparatory studies indicate the value of allocating research funds to the development of educational systems for parents, the NIE program in this area might consist of the following steps:

1. Survey of existing parent education projects and analysis and evaluation of their components, aims, and results.

2. Assistance to educational or other authorities wishing to duplicate the validated features of existing programs.

3. Identification of sites for new experimental programs.

4. Creation of experimental programs to meet specific performance objectives integrating a variety of approaches, with evaluation of the effectiveness and cost-benefits of various combinations of curriculum and operating styles against these objectives.

5. Study of the incentive structures of hospitals, school administrations, State and local governments, and other authorities; and the ways of manipulating such incentive structures to encourage the adoption of proven parent education services.

6. Studies of newly emerging social needs which would prompt changes in the nature of the educational program.

2. Education for Old People: The recent White House Conference on Aging tentatively identified a number of areas in which older citizens could benefit from educational services, yet found that neither the Administration on Aging nor the Office of Education has any substantial involvement in the field. In only one state, New York, does there exist a division of the Department of Education concerned with the needs of old people, while the educational efforts of the State Units on Aging were found to be minimal.

As with educational services for other client groups poorly served at present, preliminary studies by the NIE will be necessary to determine the costs and most productive avenues for the development of new educational systems. On the basis of work done by the above White House Conference, it is possible to list the following as plausible avenues for the NIE's early investigation:

- Identification of the educational resources of America's 20 million older people, both to establish needs and to find the extent to which they may be able to assist various educational jurisdictions, as instructors, consultants, or helpers.

- Investigation of the potential of television programming especially designed for old people, to inform them of available social services, to enrich their leisure time, or to help them in other ways.

- Experimentation with the opening of conventional educational systems at the elementary, secondary, and college level to retired persons, and ways of financing their attendance at those institutions.

- Pilot projects in community-based education for the operation of consumer cooperatives, non-profit social service organizations, handicraft industries or other post-retirement occupations.

- Experimental work in pre-retirement "transitional" education to prepare people on the verge of retirement, and educate them to cope with the complex social systems (e.g., Medicare, Social Security, etc.) set up to serve them.

In all such projects NIE work could share some common themes:

- Efforts would be made to identify successful practices already underway at State and local levels, and to broaden access to information about those successful projects.

- NIE-sponsored development projects would attempt to integrate whatever educational services already exist with more comprehensive services being developed.

- NIE research would cover the range of issues from the determination of needs through the development of systems to meet those needs, the creation of pilot systems and the dissemination of information about those systems; and would provide the continuing monitoring of operating systems.

These examples, illustrating the NIE's stance in education for parents and old people, suggest the range of activities that might be considered in the provision of educational services for other poorly served audiences. The determination of needs and the examination of alternative program possibilities should be one of the most important early research tasks of the NIE.

PROGRAM 3 - A PROGRAM IN THE AREA OF DECISION-MAKING: FOSTERING COMMUNITY INVOLVEMENT IN EDUCATION THROUGH COMMUNITY VOUCHERS

The public schools enjoy virtually monopolistic status in providing educational services. Except for the very wealthy and those with strong religious convictions, no meaningful choice is available. Apparently, however, large numbers of parents have lost confidence in the public schools and are dissatisfied with the educational services they provide.

In some communities, alternative schools operating with strong parental support have been established, but this is an option open only to those parents who have the time, energy, money, and sophistication required to participate effectively. Those parents who live in poor neighborhoods are typically unable to exercise this option, and have turned instead to the public schools, demanding a greater degree of community control.

In all communities--whether rich or poor--there are parents who would probably welcome the opportunity to make a choice concerning where and how their children should be educated. Although it is impossible to know how many parents would make use of such an opportunity if it were available, there are many reasons to believe that the number is not negligible.

The plan described below provides a mechanism for parents--as community groups--to obtain the educational services they want and need. Like the plan currently under study by the Office of Economic Opportunity, it does so by providing parents with a voucher, but the voucher is extended not to individuals, but to parent groups acting

in concert to select and implement an alternative education for their children.

Parents in different communities are likely to have different needs, and no one solution is certain to be best for all. Consequently, this proposal calls for the development of the community voucher to meet local educational needs as expressed through parental choice.

A. Specific Objectives: The proposed plan calls for an experimental development of the community voucher scheme. Specifically it is designed to:

- provide parents, the consumers and clients of educational services, with an opportunity to purchase such services from a variety of producers through the mechanism of a community voucher;

- provide residents in a local community with a choice among educational alternatives through the development of a preferential voting mechanism;

- establish a procedure for providing parents with information concerning the performance of the public schools and any alternative schools in which they may be interested;

- study the effects of preferential voting on parent choices as between the local public schools and the alternatives available;

- examine the effects on the public schools when such choices are available to parents;

- study the ways in which the educational services purchased by community vouchers affect parental satisfaction and the learning of students.

B. The Proposed Plan: The basic elements of the proposed plan might be as follows:

1. Educational vouchers would be issued by an authorized State agency to a locally-established community group. Individual parents, not affiliated with a community group, would not be eligible to receive a voucher.

2. The community group that receives a voucher would consist of parents or guardians of school-age children who, in a local preferential election, indicated a desire to obtain alternative schooling for their children instead of sending them to the local public schools. Other community members could also be

part of the group in order to insure broad representation and support.

3. The dollar value of the voucher would depend on the number of students to be served. The money would be derived from Federal, State, and local sources in a pattern and amount consistent with that of the local public schools. In no case would per-pupil expenditures represent an amount lower than the existing level of support in the local public schools. Under certain circumstances, however, it might prove necessary to increase the per-pupil expenditure for the community group electing to receive a voucher if it could be shown that the local level of support did not meet community needs.

4. The voucher would be administered jointly by representatives of the community group and a local voucher agency. This agency would have a small NIE-supported staff that would work with community groups to implement a voucher system. The agency would provide information to community representatives and parents interested in the voucher plan, facilitate public discussion of the advantages and disadvantages of the plan, and would assist in the development of the local voucher system if, in a preferential election, a community group (or groups) who wanted to establish alternative voucher-supported educational services was identified. The local voucher agency would function in a facilitative role and would provide needed administrative and regulatory services. It would not, however, monitor the performance of the community group.

5. Guidelines for obtaining and using a community voucher might be developed cooperatively by the NIE, the State Education Department, local representatives of the public schools, and community leaders. Communities under court order to desegregate the local public schools would be ineligible to apply, and the voucher could not be used by any community group to insure racial segregation. However, the guidelines could stipulate that, as long as public policy is not violated, conditions for obtaining vouchers and constraints on their use would be minimal.

6. An approved voucher school could be a new school especially created to fill an expressed community need, or it could be an existing alternative school. It would be required to accept the voucher as full payment of tuition, and would not be permitted to charge tuition beyond the value of the voucher. Voucher schools would be required to accept any student as long as it had vacancies, and to develop fair and uniform pupil personnel policies to insure non-discrimination.

7. The local board of education would be responsible for administering the public schools, and for providing educational services for students whose parents did not elect to send them to a voucher-supported alternative school.

The effectiveness of the community voucher plan, as described above, must be developed experimentally through a demonstration project designed to meet specific program objectives. Before such a field test is carried out, however, it will be necessary to formulate the program in greater detail. Specifically, the following steps are proposed:

1. Conduct an in-depth feasibility study: Since OEO is currently experimenting with another type of voucher plan, NIE would study the history of that effort and, hopefully, avoid a repetition of whatever errors this first effort may have produced. As a prelude to developing a set of guidelines, we would sharpen the ground rules, under which the program would operate, deciding such matters as the definition of "community," the best procedures for administering a voucher plan, an appropriate development strategy, and procedures for the evaluation of results. At this stage in the planning, it would also be necessary to construct a viable plan for designing and organizing local voucher agencies and for developing a mechanism to assess community preferences.

2. Locate several communities where a field test is possible: NIE would begin the experiment on a small scale, involving no more than two or three communities at the outset. Although specific criteria for site selection would be developed during the course of the feasibility study, NIE should probably be guided by the existence of such elements as:

- apparent community interest in the plan;
- the community's ability to develop alternative schools if such schools do not already exist;
- the willingness of public school authorities to cooperate;

- the non-existence of legal barriers, or the possibility of removing such barriers;

- evidence of real need for an example of reform in the school district or community.

3. Establish a local voucher agency, inform the community of the plan, and arrange a preferential election. A number of procedures would have to be worked out in detail before NIE could proceed to this stage. However, plans for providing information about the voucher scheme to parents and students would probably include radio and TV announcements, bulletins and flyers to State Education Departments, school superintendents, local schools, and the availability of NIE staff to meet with interested community or school groups. Presumably communities would need assistance in holding a preferential election; NIE might perhaps provide this assistance by helping to organize a town or community meeting to discuss issues, and by providing examples of preferential ballots.

4. Assist in implementing voucher schools for those communities which elect to have them. Prior to establishing any voucher-supported schools, a community would need information on educational alternatives. NIE would have provided much of this information during stage three (above), but would also continue to work with communities in obtaining the additional information which might be needed to set up such schools. In addition, NIE might help communities send out bids, review incoming proposals, and negotiate contracts with suppliers of educational services. Whenever a community expresses a need for a particular kind of information or service, NIE would have to be able to respond.

5. Document and evaluate the experiment. If generalizable elements are to be isolated from this experimentation, it is imperative to have good documentation about the problems and difficulties encountered in each stage. Additionally, a sensitive evaluation plan must accompany the stages of planning, development, and implementation. As the program is implemented, specific features would necessarily be altered to reach performance criteria, and NIE would accordingly document and evaluate each stage of this effort.

PROGRAM 4 - A PROGRAM IN THE AREA OF DECISION-MAKING: EXPERIMENTATION WITH ALTERNATIVE VOTING TECHNIQUES

Increasing numbers of parents are demanding greater participation in educational decision-making, and increasingly are refusing to support bond issues for their local schools. It is not clear to what extent there is a genuine conflict between school administrators on the one hand and parents and taxpayers on the other, but it is apparent that many people believe that the trouble with public education is that it is "efficient" only with respect to the goals of educators. Of course, the basic vehicle created to regulate and bring together the preferences of the public and the "professional" interests of the school administrators is the elected school board (or the school board appointed by an elected official). These officials have, over the years, removed decision-making on matters of school policy from parents and citizens, with the school professionals persuading the various lay groups that they are most qualified to make such decisions. Yet, there is evidence that the school leaders do not make strong, responsive policy changes. In the fiscal area, for example, there has been a surprisingly constant mix of resource allocations over the last 50 years. That is, proportions of money spent on administration, instruction, plant operation, plant maintenance, other school services, summer schools, adult education, and community services have shown no sharp changes. This constancy of input mix over a period of time when the demands on education, our technical knowledge, and the aggregate level of resources devoted to education have changed significantly appears, *a priori*, to be the result of an inflexible, non-adaptive educational system. Add to this the fact

that the public usually has but one choice in bond elections--"yes" or "no" to a specified amount of money--and it isn't surprising that citizens have a feeling of non-involvement in the decision-making process and growing frustration at their lack of power.

This program purposes a solution that is based on the following hypotheses:

1. Individuals will support a higher level of expenditures for education when the goals and services provided by the educational institutions more closely approximate their own preference, and when they feel that they have some involvement in the decision process which determines the size and composition of these expenditures.

2. Allowing citizen preferences to influence the allocation of educational resources will promote a more responsive system than now exists, so that expenditures--if not necessarily higher--are at least used more effectively.

There is theoretical as well as empirical support for these hypotheses. The theory of social choice suggests that individuals will choose to support public expenditures at a higher level when the composition of these expenditures more closely reflects their own preferences (4), and a statistical study of the fiscal performance of 529 school districts concluded that the combination of public vote and relatively modest pupil enrollment is effective in maintaining the school district's economic performance. This empirical study found that wealth is highly significant, but not more so than public vote (5).

With this kind of evidence, and because voting is the most widely accepted means by which decision-making authorities can determine social preferences, we believe that the public vote should be more widely employed as a means of making decisions and reflecting community preferences in education. Voting procedures should be

developed so that they can be used to determine not only the level of educational expenditures, but also the composition of educational goods and services as provided by the system.

A. Specific Objectives:

This proposal calls for the development, tryout, and evaluation of:

1. Unconventional voting procedures that allow taxpayers to determine: a) levels of educational spending for curricular and capital outlays; b) tax sources that are the most acceptable means of educational support; and c) broad policy matters in their local school districts.

2. Procedures for informing the public about local educational decision-making, and insuring their active involvement so that voting decisions are based upon knowledge and understanding of the issues.

B. The Proposed Plan:

1. To examine the feasibility of several alternative voting plans for school spending, including at least the following:

--A system of multiple-choice voting, as contrasted to the present all-or-nothing choice that typically exists. This system, as illustrated in Figure 2, could allow choices in spending levels, in items to be paid for, and in most acceptable sources of taxation. Thus, a given individual might vote for a school costing one million dollars if it is financed by either an increase in the sales tax (IB) or the income tax (IC), while voting for a school costing one-and-a-half million dollars only if it is financed by an increase in the income tax (IIC). Any number of expenditure proposals could be combined with any number of tax proposals, limited only by the requirement of keeping the ballot manageable.

--A system of plurality voting or unit ranking, in which the winning alternative is chosen on the basis of the total score obtained by summing each voter's ranking of the available alternatives. For example, consider the preferences of individuals X, Y, and Z for the alternatives (a), (b), (c), and (d) as reflected in the rankings shown in the table below, where a vote of 1 indicates the most preferred alternative. Under the present mechanism of majority rule,

FIGURE 2

Multiple-Choice Voting

I. Construction of a school at the cost of one million dollars to be financed by:

A. a - mil increase in the property tax	Yes _____	No X
B. a - percent increase in the city sales tax	Yes X	No _____
C. a - percent surtax on the city income tax	Yes X	No _____

II. Construction of a school at the cost of one-and-a-half-million dollars to be financed by:

A. a - mil increase in the property tax	Yes _____	No X
B. a - percent increase in the city sales tax	Yes _____	No X
C. a - percent surtax on the city income tax	Yes X	No _____

alternative (a) would be chosen. Under the plurality rule, however, alternative (b) would be chosen. Use of the plurality rule would take account of individuals Z's strong opposition to alternative (a)--ranking (a) last--and the relatively weak preference of both individuals X and Y for alternative (b) over (a), ranking (b) first and (a) second.

Table 1

Alternatives

		(a)	(b)	(c)	(d)
	X	1	2	4	3
Individuals	Y	1	2	3	4
	Z	4	1	2	3
Totals		6	5	9	10

In this case, weighting of minority views would alter the outcome that would have resulted from the use of majority rule.

--A point voting system which would allow individuals to reveal the intensity of their feelings. For example, each voter might be given one hundred points which he could allocate to the various alternatives in relation to the relative weight that each carried in his preference function. The following allocation of points (Table 2) would be consistent with the above rankings given by individuals X, Y, and Z to the alternatives (a), (b), (c), and (d).

Table 2

Alternatives

		(a)	(b)	(c)	(d)	Total
	X	30	28	20	22	100
Individuals	Y	80	10	6	4	100
	Z	15	32	29	24	100
Totals		125	70	55	50	300

With a point voting system, alternative (a) would again be chosen over alternative (b). This results from individual Y's preference for his first choice (a) over his second choice (b). On the other hand, if individual Y had a preference structure similar to that of individual X, alternative (b) would be chosen over alternative (a) even though both X and Y would have a slight preference for (a) over (b). The total points for alternative (a), (b), (c), and (d) under these conditions would be 75, 88, 69, and 68 respectively. Here point voting would lead to the same final ranking of alternatives as plurality or unit voting.

2. To assure that educational decisions that should appropriately be made by professional educators and administrators are carefully defined and left to them, the public would not be consulted on decisions which involve specific technical matters. The appropriate items for ballots would be worked out in each individual community.

3. The precise methodology for the experiment would be defined during a feasibility study to be done in the coming spring. However, an example might be as follows: Several districts that are about to have bond elections could be selected as experimental sites on the basis of public interest in change, lack of success in current bond issues, and variation in size, geographic location, and wealth. A contractor (perhaps the League of Women Voters, or local units of the National Committee for Support of Public Schools) might be selected in each district to develop alternative ballots and sponsor experimentation with them. A sample (say every fifth voter) would be asked to fill out a second ballot along with his official one. Each community could probably test many feasible new kinds of ballots, with technical assistance from NIE.

4. Public information programs would be developed so that citizens at each experimental site could be reached before voting

experiments occur. The programs could explain procedural changes, consequences of available choices, and benefits of the new voting procedures. For example, if a decision is to be made on the location of a new school, the information program would have to include knowledge of the expected population growth in different areas of the city. Evaluation of the information system as well as each voting procedure would be part of the program.

5. Results of the new balloting systems would be analyzed and reported for each community. A post-survey would determine community reactions to the new information program, the kinds of ballots, and the results.

6. A conference of local contractors would discuss results and make recommendations. Results would be published and discussed with such organizations as the Education Commission of the States, State Departments of Education, and the Association of School Administrators.

7. If the new voting procedures prove to be successful, NIE might consider writing suggested legislation for States, or seeking other organizations (for example, OEO or OE) that could support technical assistance in writing such legislation.

PROGRAM 5 - A PROGRAM IN THE AREA OF PRODUCTIVITY: THE UNBUNDLING OF HIGHER EDUCATION

Institutions of higher education perform several different functions tied together in one package and offered to students on a take-it-or-leave-it basis. This monopolistic practice enables institutions to resist the introduction of technology or other innovative practices that might be more cost effective for the individual clients. Further, furnishing unneeded and undesired services, and requiring students to purchase these appears wasteful of both institutional and student resources. The program proposed here is designed to show the feasibility of unbundling the educational services provided by colleges and universities. It is anticipated that when this is done, an increase in productivity will follow.

Colleges and universities serve a variety of functions. Among the most important are:

1. An educative function, by imparting information to students, and by instructing them in the skills and methodologies appropriate to the discipline or profession in which they are interested.

2. A credentialing function, by certifying educational attainment through the awarding of degrees.

3. A distributive function, by attempting to match students with schools and programs appropriate to their interests and abilities.

4. A social function, by providing the student with an institutional context with which he can identify.

5. A role-model function, by providing the student with opportunities to interact with individuals who enjoy high-status academic occupations.

These functions vary in importance and value to different students. At present, a student who wants just one service or wants selected portions purveyed by different institutions through variable periods

of time cannot purchase what he needs. Courses are packaged into credit hours, credit hours are packaged into curriculums, final examinations follow fixed schedules, specific substance is conveyed through one specific medium without the possibility of choosing one's own mode of instruction.

The anti-trust laws of the U.S. prohibit American firms from tying the sale of a weaker product to the sale of a more desired product. Yet this is apparently what institutions of higher education do. All of the functions of education are tied together, and the student at any particular institution is forced to buy them all. Furthermore, within each function, desired services are tied to undesired services (e.g., good teachers are tied to bad; students must fulfill certain "requirements" no matter what their current goals; time and site may or may not be convenient for the student who wants to work while studying, etc.)

A. Specific Objectives:

The program proposed here is designed to meet the following objectives:

- A plan will be developed and implemented to demonstrate the feasibility of separating into discrete "industries" (both profit and non-profit) a variety of educational services.

- Specific unbundled services will be developed incrementally until they can compete successfully with the traditional total-package arrangement.

- Parallel with the creation of such unbundled educational industries, fiscal plans will be developed enabling students to avail themselves of the services to be offered.

B. The Proposed Plan:

1. The Educative Function: Portions of this component already exist in the form of the current knowledge industry. Additional invest-

ments, particularly seed money, will probably be needed in such areas as the production of model courses via interactive cable TV, educational video cassettes, and computer terminals. Insofar as possible, courses should be self-contained and independent of specific sites of instruction. For the natural sciences, this will involve the ingenious design of laboratory experiences, conceivably modeled on the British Open University home experiment kits. It would appear that this function can be largely performed by the private sector, once profit potential is demonstrated.

2. The Credentialing Function: Credentialing and accreditation agencies could be developed to fill several functions: test-drafting, test-making, credit and degree awarding, grading, and perhaps assigning performance-oriented tasks (writing of papers, experimental investigations, developing a piece of curriculum in the case of a prospective teacher, financial analysis of a development project for a future economist, etc.). Choices of grading systems could be available to students. Accreditation agencies could award diplomas both on the basis of their own grades and those of other firms. Competing agencies, some perhaps profit-oriented, should be encouraged. If choice is available, quality should be regulated by the market place; e.g., chemists certified by ACS might be preferred for industrial or academic employment over graduates with chemistry majors from an undistinguished institution.

3. The Distributive Function: Agencies, other than colleges and universities, that could carry out a distributive education function would be a fairly new phenomenon in the U.S., although a network of counseling and tutoring services exists in the Soviet Union for

correspondence students. Different types of advice might be purchasable: how to put together for oneself a specific package aimed at some career or avocational goal; intensive tutoring with choices of the type of tutoring desired (human one-to-one interaction, technologically mediated drill-and-practice); pacing for students who are not highly self-motivated through a system of fines, forfeits, and dunning. That this kind of service can be profitable has already been demonstrated by the increasing business for college placement agencies and the informal, but highly effective, tutoring and information services (ratings of teachers and courses) developed by students, for students, on many campuses. Clearly, however, the range of services and their availability need to be expanded.

4. The Social Function: Investment of Federal funds to duplicate this function does not appear appropriate. Students are likely to form their own aggregations, perhaps around tutoring centers, or unconnected to their academic activities (e.g., Woodstock, Fort Lauderdale, community action groups). Also, those students who highly value exclusivity and social connections would continue to go to high-status institutions, being willing to purchase the package in order to gain these benefits.

5. The Role-Model Function: A system of supported internships in industry and the non-profit service sector (public institutions, government, social service agencies) will allow experience with a much broader range of occupations than are modeled in institutions of higher education. Initial Federal funding of internships may demonstrate their usefulness to both student and employer so that they may become self-supporting. Responsibility on the part of practitioners

and job holders for apprenticeship education, already accepted by the medical, research, and skilled labor professions, will also be encouraged through such an initiative.

6. Student Support: Existing schemes for student support will have to be adapted to allow poor students equal access to the variety of services. Perhaps individuals could be allocated a specific amount of money, duplicating current support available for a college education, to be spent at the individual's discretion for educational services. Presumably, he would try to "buy the most for his money." This would not only allow many more options for students now in a position to go to college, but would make it feasible for poor individuals to obtain higher education, even if they need to work while doing it, or are not within commuting distance of an inexpensive (or free) city or state university.

7. Evaluation: As an appreciable number of students avail themselves of the services to be offered, comparative studies of outcomes need to be made. Components to be examined would include costs, career success (both obtaining desirable jobs and performance in those jobs), academic attainment, social and psychological effects on the individual and family, etc.

The purpose of this set of activities is to introduce greater flexibility and productivity into the system of higher education. It is expected that, even if competing services become viable, many institutions will continue to function much as they do now, since their packaging will be so good as to attract a sizeable number of students who prefer them to unbundled higher education.

Clearly, NIE cannot simultaneously undertake the full range of activities necessary to make separate educational services available to all students as an alternative to existing institutions of higher education. Hence, a time-sequenced series of activities would need to be initiated in order to build the crucial components over a period of years.

1. Unless credentialing mechanisms could be made available, assuring a student credit (grades, course credits, degrees, etc.), for achievement and performance at least equivalent to that obtainable through traditional means, he would not be in a position to choose alternative forms of instruction. Hence, the extension of external credentialing is one of the first activities NIE might have to support. Existing agencies could be funded to expand their current programs, for instance:

- the college level examination program sponsored by ETS;
- the effort by New York State through the Regents External Degree Program;
- evaluation mechanisms being developed by University-Without-Walls based on performance criteria;
- explorations by community-oriented state colleges, on how to award credits for "life experience";

Future steps in this area could include identification of other agencies that would be likely candidates to develop proficiency tests and stimulate their entry into the field. Examples are:

- Professional societies;
- High School equivalency examination boards;
- Testing agencies such as the Psychological Corporation;
- Industrial corporations already using test mechanisms for internal decision-making.

It may be anticipated that, at first, any expansion in testing and evaluation activities would be through existing institutions of higher education, as is true of CLEP now. As other components of an unbundled system were strengthened, however, the credentialing agencies could be expected to become autonomous in their operations, offering their services either through other institutions or directly to the student himself.

2. The student would need access to alternatives for acquiring knowledge. A two-pronged support program by NIE might be called for here:

a. Development of additional curricular materials which could be studied independently of institutional setting:

- Introductory courses developed by professional societies (text, correspondence homework and quizzes, tutorial guidelines for tutor-centers at local universities or community centers) to meet the requirements of their proficiency exams.

- Extension of the University-of-the-Air to cable television at three to six sites with existing installations. For the present, the courses should be developed with the cooperation of local universities, who might be willing to give credit. Market surveys should be used to establish the most highly desired courses, optimal times for broadcasting to the home, and projected enrollments.

- cooperative efforts between institutions of higher education and industrial concerns to design specialized portable courses to be offered at plant sites, in homes, at community centers, as well as on campus, and which would lead to an upgrading of employment.

b. There may be many channels of education already available in a community, but the student would need help in identifying these and putting them together in appropriate ways.

- creation of inventories of leading resources. The University-Without-Walls is already developing such centers in embryonic forms at each of the sites where it is operating. Such inventories could be constructed for several local situations, but also at a broader level of use.

- advisory systems for students not formally attached to specific institutions. Early foci for the establishment of these are the teacher-advisor networks already being set up by a number of experimental colleges, and the informal student advisory services existing on many large campuses.

3. NIE might fund a limited number of internships for individuals engaged in study at the undergraduate level. Enough sites could be supported (20 to 50) to represent a large variety of careers and types of institutions, both private and public. Federal funds might be used to subsidize part of the interns' salaries, and provide released time of permanent staff for supervision and training.

4. Studies might be funded to develop support mechanisms for students wishing to take advantage of a variety of educational and credentialing components. Two particularly promising possibilities are:

- credit banks for four years of higher education, allowing drawing rights by individuals as they perceive the need for specific kinds of education and credentialing. The government could, for instance, guarantee each citizen 15 years of free education, but with no particular specification as to how and when the "education credits" were to be used. Presumably, trustees (parents or guardians) would be using available vouchers for an individual's early education, but at age 18 (or preferably even earlier, say at age 15) the individual himself might decide what use to make of the educational funding available to him. Clearly, detailed feasibility studies and development of fiscal support plans are necessary before such schemes can be evaluated and tried out.

- full funding of higher education. In the case of this mechanism, a variety of proposals have already been worked out in some detail (Weisbrod and Hansen for the State of Wisconsin; Armacost et.al., for the State of Kansas; Singell, Schrock & Yordan in a general scheme using the Federal income tax system for repayment of long-term loans, etc.). NIE might support evaluation of the various schemes for feasibility of early implementation, and subsequently support their testing out in several sites (number depending on readiness and size of geographic subunit, e.g., individual institutions, state-wide system, all institutions in a metropolitan area, etc.). While first trials of full-funding schemes are likely to be institution-centered, such mechanisms, if successful, will clearly advance the fiscal power of the individual buyer in a diversified and competitive educational marketplace.

PROGRAM 6 - A PROGRAM IN THE AREA OF PRODUCTIVITY: STIMULATING GREATER USE OF TECHNOLOGY IN EDUCATION

The last quarter century has been characterized by radical advances in the communications media. One need only think of the impact on most individuals -- particularly children -- of mass television-viewing, or the industrial and technological changes wrought by the advent of high-speed computing devices. Marshall McLuhan has made a career of popularizing his views on the results of these developments; other somewhat more sober futurists (e.g., Peter Drucker and Alvin Tofler) have also commented on the current and forseeable future changes in our society directly ascribable to the speeded-up communication process.

Interestingly, the new technologies have made very little difference in the one endeavor totally concerned with communication, namely the educational system of the country. True, new subfields (e.g., film production and computer sciences) have been introduced on some campuses, and prospective science professionals learn new techniques necessary to their careers. But the way in which the substance of education at all levels and in most fields is communicated remains essentially unchanged, despite investments running into hundreds of million dollars. Why the unwillingness or inability of educational systems and institutions to take advantage of the new communications technologies?

- Systems and institutions of education are essentially conservative and static. Their heaviest investments are in staff, and then in buildings. Neither are easy to convert to new practices, nor can they be quickly eliminated and replaced by up-to-date elements.

- Initial investment to install effective new communication technology is often high. At a time of financial crisis for school systems and universities, funds must be used for maintenance of the operation rather than its improvement, even though such improvement would prove cost effective in the long run.

- While appropriate mechanical devices are available, intellectually respectable substance (i.e., software) is often missing, R&D having been largely concentrated on hardware. The failures of teaching machines and closed-circuit educational television are largely ascribable to this fact.

- Too little is known about the man-machine interface in the learning process. What part of information purveying is most effectively done via a non-human mediator? For what age levels and what types of learning is the physical presence of a human being indispensable? What little evidence we have does not always bear out popular notions: In an experiment in Brooklyn's Brownsville section, both elementary school children and adolescents appeared to make better progress when taught to read via a mechanized responsive environment system, perhaps because the neutral machine was endlessly patient and voiced no adverse criticisms. At the Oakleaf School, small children learn to use the well-arranged storage and retrieval system of learning units without adult help. The independence and purposeful activity of six- and seven-year olds in such a setting is in marked contrast to traditional primary classrooms.

- Development in the knowledge industry has been most active in areas where quick profit returns were to be anticipated. After some initial investments in developing educational applications, many profit-making concerns have withdrawn from this activity in favor of sure-fire educational products (such as textbooks) where markets and sales techniques are established and well understood.

The recent history of the application -- or lack thereof -- of communications technology to education makes it clear that no advancement is to be expected without well-planned Federal initiatives. And yet, increases in productivity in most fields share the two common elements of competition and mechanization, the latter generally attended by conversion from labor-intensive to capital-intensive

operation. The program activity suggested above under the title "The Unbundling of Higher Education" is one attempt to introduce competition into the system; the activities sketched below are aimed at using technology to increase productivity.

A. Specific Objectives of this Program:

- To establish a firm base for systematic experimentation in which educational technology is introduced with a specific focus on productivity;
- To conduct experiments that have a high potential for pay-off;
- On basis of such experiments, to support viable models of effective use of technology in education.

B. The Proposed Plan:

1. Contract for studies examining the history of R&D in educational technology in order to identify the crucial factors leading to successful applications in specific instances, while inhibiting broader use. While a considerable literature exists in this field, there is as yet no critical analysis available to allow the setting of priorities based on likely pay-offs for further investments in educational technology.

A variety of media could be included in the NIE studies:

- closed-circuit educational television;
- cable television, in and out of formal instructional settings;
- radio and audio cassettes;
- films, video tape, and audio tape cassettes;
- computer-assisted instruction
- computer-managed instruction

- communication satellites,

- and "old-fashioned" media such as printed texts, correspondence instruction with suitable counseling and tutoring, etc.

Each of these media could be examined along several dimensions:

- educational effectiveness, for both the cognitive and affective growth of students;

- costs, for start-up and for continuing operations;

- suitability for specific settings: age levels, subject matter, physical environment, human support components, etc.;

- political and social factors facilitating or impeding adoption;

- anticipated contribution to productivity.

2. On the basis of such studies, the most promising opportunities could be identified. A second input component is likely to result from the current efforts of the Committee on Automation Opportunities in the Service Areas, particularly its Education Panel. Possible choices for next steps are already emerging from the extant literature, for instance:

- a community college with a very small campus that invests its capital in equipment rather than physical plant. Teaching would be conducted mainly in the home or in small decentralized and infrequent groupings of students.

- computer-assisted instruction in basic skills in elementary school, with attendant rearrangement of student-teacher ratio and diversification of staffing, including use of community aids and other paraprofessionals.

We would need, however, to marshal and analyse the available evidence much more thoroughly before launching into

such specific initiatives.

3. Once initiatives are identified and priorities set, there might be some limited studies or experiments testing the assumptions made and filling in information gaps. Several examples, some already underway, will illustrate what types of projects could constitute this phase:

- a study of incremental costs in providing specific social services via cable TV, assuming, as a given, installation costs and subscription to currently available programs. Included would be specified educational programs, health care (e.g., diagnostic) services, fiscal transactions (e.g., credit, payment of bills, etc.). Such a study is now being proposed to NSF by the Mitre Corporation and will probably be funded.

- a test of computer-aided instruction at the junior college level, with a view toward establishing base line information on costs; suitability to various settings; and educational outcomes of two entirely different systems, one with large central computing facilities and numerous terminals and an easy programming language designed for local curriculum development, the other with on-site mini-computers and a centrally developed curriculum. This kind of experimentation is long-range (five years) and costly ($10-15 million). It is, however, as indispensable to the wide-scale introduction of educational technology as any pilot plant, model plane, or limited metroliner service to the upgrading of the industries involved.

- production of a common-core curriculum to be conveyed via advanced telecommunication networks serving extended districts. Core facilities already exist in the Coast Community College district, for instance, and in the television network set up by SUNY in cooperation with local ETV stations. NIE might fund the development of substantial amounts of curriculum material, so that as much as half of lower division instruction for participating institutions could be taught via the telecommunications networks.

4. A second-stage effort in which the most promising of the developments studied and tested in 3. (above) might be implemented in several sites (five to ten). A subactivity could be the support of projects to overcome shortcomings identified in the preceding phase, such as improvements in accessing mechanisms (terminals) or in curricula substance, better mixes of human-machine components, more astute management of social and political environments, etc. It is likely that this phase would be even more costly than 3., but attached to these costs would be a high degree of confidence that the investments made would indeed result in enhancing educational productivity.

5. Widespread introduction of proven technologies in appropriate settings. This phase would be beyond the concerns of NIE, except for advisory and seed money support to assure successful installation. At this point, such a program area might be transferred to another operational unit of NIE, such as the Office of Practices. Continued monitoring of adopted innovations will be necessary to assure the introduction of cost-effective changes as advances are made in communications technology.

PROGRAM 7 - A PROGRAM IN THE AREA OF SUBSTANCE: THE DEVELOPMENT OF THEME SCHOOLS

The American educational system has been largely indifferent, and often hostile, to the racial, ethnic, and linguistic diversity in the U. S. Traditionally, the schools have been regarded as a central aspect of the "melting pot." Their purpose was to "americanize" young people, and to enable them to pursue conventionally-defined goals. As a consequence, the public schools are basically traditional and inflexible at a time when creativity and adaptiveness are urgently needed. In addition, the schools depend upon practices that are sanctioned by the conventional wisdon of educational professionals, with little or no regard for student or parent viewpoints. In the mutual adjustment of the student and the school, it is primarily the student who must make most of the adjustments. The schools have not been conspicuously successful in responding to the new needs created by ethnic diversity, nor can they fully accommodate children with exceptional abilities, interests, handicaps, or aspirations.

A familiar complaint about the public schools is that, in addition to the ostensible subject-matter curriculum, they teach a hidden curriculum as well. Largely, through their mode of operation, the schools foster shallow competitiveness, dissembling, and manipulativeness. The requirements of order and stability demand of all participants--teachers no less than students--a high degree of conformity if the system is to function predictably, and the highest esteem therefore goes to those who are most docile.

There is clearly a need to experiment with different kinds of educational experiences. Alternative schools are needed that teach

trust, concern, compassion, open-mindedness, sensitivity, and a sense of community, as well as those more traditional educational values schools lay claim to: task perseverance, mental toughness, knowledge and understanding, and delight in learning. Alternative schools are needed that can respond to a broader range of life styles than the public schools can easily accommodate. Above all, schools are needed to provide models of educational practice that demonstrate the possibilities of radical departures from the traditional school model that dominates present school practice.

This proposal calls for the development of a small number of alternative demonstration schools based on educationally-relevant themes. These schools would be small in size, but by virtue of careful planning and development work, they would display bold and imaginative educational practice. Each school would begin with an interrelated set of ideas of potentially great educational power, and would then attempt to develop a full range of educational procedures consistent with these underlying ideas. Guided by some explicitly articulated educational or psychological viewpoint, each school would develop an integrated program--including a curriculum, materials, techniques, day-by-day routines, etc.--that was internally consistent and theoretically coherent. Thus, each school would adopt some theme and then systematically reflect this theme in everything it would attempt to accomplish.

These alternative theme schools could take as many forms as there are unifying ideas to guide school development. A few possibilities are:

--A school based on the use of aesthetic experiences (art, music, dance, drama, etc.) as opportunities, not only for creative expression, but also as vehicles for developing literacy.

--A school based on the use of the most sophisticated examples of instructional technology.

--A school based on the principles of behavior modification.

--A school based on ecological concepts emphasizing man and the environment.

--A school based upon a projection of the future world and the qualities of mind and spirit young people will need to function effectively in that world.

--A school with a culturally-based curriculum.

Clearly, schools such as these cannot be established without a great deal of planning and initial developmental work. There are, however, many indications which suggest that such theme schools are both a feasible and exciting experimental opportunity. Although there are some attempts within the USOE to experiment with alternative forms of education, especially in the Experimental Schools Program, this proposal calls for something quite different in form and substance. This program would have a "top-down" rather than a "bottom-up" focus, generating in-house the plans for comprehensive theme-based schools for small settings rather than the K-12 arrangement for 2,000 - 5,000 pupils which is a part of the Experimental Schools design. The theme schools might, unlike those in the Experimental Schools program, operate in the private as well as the public sector. And even though both programs emphasize comprehensive modification, documentation, and evaluation, the conceptual approaches differ radically enough to warrant an experiment with each type.

A. Specific Objectives:

The program objectives are as follows:

--To examine the feasibility of establishing a number of schools based on coherent thematic models.

--To develop specific plans for a limited number of such schools that appear most feasible.

--To establish such schools in settings where there is community support and other evidences of local interest.

--To gather extensive documentary evidence concerning the developmental and operational problems associated with the creation of alternative theme schools.

--To evaluate the effects of these schools in relation to their stated goals, as well as their effects on the pupils and the local communities in which they are established.

B. The Proposed Plan:

1. Feasibility Study (January - June, 1972): Before launching any developmental activities, we would need to do a careful study of the practicability and cost of creating alternative theme schools as experiments. Among other things, we would need to know:

--the availability of appropriate persons to develop theoretically coherent plans for such schools;

--the location of communities (local neighborhoods, school systems, universities, etc.) that would welcome such experiments;

--the kind and degree of cooperation that would be needed from SEA's, LEA's, certificating and credentialing agencies, etc.;

--the estimated costs of mounting the effort;

--the types of theme-based schools that are most feasible in terms of development, implementation, evaluation and assessment, and that are most likely to provide the greatest payoff;

--whether or not and to what degree the creation of theme schools would necessitate changing laws, sanctions, or regulations; and

--whether or not five years or some other span of time is a suitable time frame for the experiment.

2. Development of the Models (FY 1973): Depending on what the feasibility study suggests about site, personnel, contracting procedures, etc., a planning team might develop plans for two or three models during FY 1973. The planning team might include, in addition to educators who are talented in curriculum development, persons who represent relevant disciplines like law, architecture, technology, sociology, etc. The team might in addition to formulating evaluation plans and accountability procedures, select appropriate sites for implementation in the autumn of 1973.

3. Implementation (August, 1973): The first theme schools might become operational in the autumn and continue as an experiment for perhaps five years. Each school could receive assistance and needed support from NIE during the experimental period. In subsequent years, other theme-based schools might be introduced.

4. Documentation: During the development and implementation stages, NIE could collect extensive documentary evidence concerning problems associated with the creation and conduct of alternative theme schools. One of the models might, for instance, require a democratic arrangement whereby staff and students jointly decide such matters as curriculum and scheduling, while another might develop a completely packaged plan requiring training in a particular method or style of teaching. Still another might develop something like a culturally-based model whose curriculum would require intensive training of teachers. Actual costs might differ radically from estimated costs. State accrediting agencies and teachers' unions might resist the elimination of credentialing barriers. These and a host of other possible problems are ones on which NIE would gather information for

further study.

5. Evaluation: The alternative theme school program should be viewed as an example of reform by experiment. Each theme school would be planned with specific objectives to be reached, and NIE would evaluate the effects of these schools on students, staff, parents, communities, and existing school systems as these objectives came closer to full realization. A systematic evaluation designed to measure the effectiveness of the schools as change agents might also be conducted.

PROGRAM 8 - A PROGRAM IN THE AREA OF SUBSTANCE: TO INCREASE THE AUTHENTICITY OF LEARNING EXPERIENCES THROUGH THE USE OF COMMUNITY RESOURCES

The lack of congruence between schools and the community or adult society is a serious problem facing American education today. The most critical aspects of this discontinuity are to be found in the restricted range of experiences a student encounters during the course of the school day, and in the kinds of knowledge a student acquires. Students spend many hours a day cut off from a variety of adult role models which could provide both social and intellectual growth. Often the content of various school courses has been filtered through so many mechanisms (methods courses, textbook revisions, department chairman's suggestions, state syllabi, etc.) that by the time it reaches the student it bears little resemblance to real, accurate, or important knowledge. Public schools have attempted to provide an education that will enable students to take their places in the real world. But too often they have attempted to do this in isolation from the real world or without using the resources available in the community.

The plan detailed below describes a program for utilizing community resources as a major component in a high school student's education. The community would be given the opportunity to provide instructors, instructional sites, and even the content itself for its students in a cooperative arrangement with the schools. We realize that different communities have different resources and students do not all have the same needs and interests. Consequently, this proposal calls for an experimental demonstration of the ways in which community-centered

learning can meet the educational needs, and improve the educational services of the local community.

We also realize that there is historical precedent for some of the activities which will be proposed. Learning and working within the community are not radically new ideas; however, we believe that they deserve the benefit of a carefully designed, comprehensive research and development plan which will identify and examine both the positive and the negative features of their implementation.

A. Specific Objectives:

The program proposed here is designed to:

--Provide students with a greater variety of adult role-models, than is available in the typical school;

--Utilize the non-school educational resources in a community;

--Study the ways in which community-based study affects the learning of the student;

--Study new information processing and display skills which the community-based curriculum promotes;

--Study the effects on standard curricula and teaching techniques when community-based experiences are made a part of the school day;

--Establish a mechanism for disseminating the generalizable aspects of locally-developed community-based curricula.

B. The Proposed Plan:

NIE would identify a small number of communities which represent diverse geographical areas and cultural styles, and which demonstrate a willingness to experiment with community resources in education. These resources fall into three categories: 1) community teachers, 2) community learning sites, and 3) a community-based curriculum. Then NIE (or an outside contractor) would aid the community in identifying, utilizing, and evaluating these resources to provide a

more meaningful educational experience for its students. At the same time NIE (or the outside contractor) would record those elements or procedures which were generalizable so that other communities might more readily utilize their resources in educating their students.

1. Community teachers: A community teaching pool could be established. Into it would be placed the names of all those willing to share their expertise with a number of students. Special attention would be paid to finding people who are outstanding practitioners of their craft, trade, or profession. These teachers could be assigned a specific number of students to teach for a specified time. Appropriate course credit might be given by the schools to those students who successfully complete their community-based courses. These courses might be a year or longer (as in an industrial or trade apprenticeship), or only a few weeks in duration. Each teacher could be evaluated by each student. Business and industry might be given some form of tax credit for each hour of employee time it donates to teaching. Or a community teacher could build up education credits which he could then use to purchase educational services for himself or for his family.

2. Community instruction sites: Those community teachers who could not teach their subjects in the school building would indicate where they could teach. This group of locations would form the basis of a community instruction site network. In addition, those non-school community agencies which traditionally provide some form of educational services, such as the Red Cross, the public library, the YM or YWCA would also be included in this network. These sites would be viewed as school extensions, "classrooms" where students would

receive an integral part of their school experience. If there was not already an agency to serve this purpose, a community-learning center could also be established. This site could be the locus for cross-generational learning, a place where parents and children could come together to share in teaching and learning about subjects which interested them both. Alternative modes of access to these community instructional sites should be made available. Some schools might decide that every student would spend eight consecutive weeks in community instruction sites (similar to the Swedish model). Others might decide they would spend one day out of five. Others might choose one hour every day. Obviously the choices would vary with student age, community alternatives available, etc.

3. Community-based curriculum: The traditional approach to high school instruction gives the student a textbook abstraction of the world around him. This project would develop procedures and materials that give the student the skills and the opportunities to draw his own conclusions and develop his own abstractions based on close personal interaction with the world around him. NIE (or the outside contractor) would select a sample of teachers from each community on the basis of interest, strong subject area background, and other relevant criteria (such as sex and race representation) to participate in a first summer workshop and training session. These teachers could be drawn from and representative of at least the Science, Social Science, and English Departments. It would also select a national group of scholars or professionals who might aid the local teachers, and who would study ways in which the replicable elements of the local curriculum could be disseminated.

During the summer session the teachers would explore ways of using the community to provide the content and context for student study. They would also prepare their first materials. After the school year began these teachers would have released time to continue planning and to share progress reports. During the second summer the original group of teachers would participate in the orientation and training of a second group of teachers. The national group would, as much as possible, work alongside the local teachers in the training sessions and during the school year. They would identify problems common to all the communities and attempt to find solutions to these problems. They would also serve as a means of communication between communities, for the purpose of sharing good ideas and experiences.

C. Content: Each community has its own unique resources but it might be helpful to look at ways in which any community could use a resource found in almost any town--the telephone company. Assuming that local teachers could elicit cooperation from the telephone company officials (and this would be considered a part of developing the curriculum), here are some of the ways this resource could be used.

Suppose the physics teacher were teaching this telephone-company-based course. Students would study principles of electromagnetism, sound conductance and amplification, and relays and switching circuits. They might also investigate the probability theory associated with the number of lines and switches necessary to service a given number of customers. They could study the chemistry of the non-reactive materials necessary for underground conduits. Students would learn (through taking them apart and putting them together again) how an ordinary home phone set actually works.

If a social studies teacher were teaching this course, students would study hiring practices and job requirements for various company positions. They would learn about the degree of freedom the local manager has in running his company, and about how FCC regulatory practices affect local operations. They would study advertising practices and bill-collection policy. They would investigate the company's environmental policy (e.g., is the company committed to overhead lines which are inexpensive but unaesthetic, or underground lines which are invisible, but expensive?). They could study the composition of the board of directors and compose a profile of the board.

One goal of this curriculum project would be to show students--and school administration--that areas of study need not necessarily be compartmentalized into the traditional academic disciplines. Although it would be possible (and in fact probable, at first) for the physics teacher to teach his course in the science of telephone communication and for the social studies teacher to separately teach his course in the social aspects of telephone communication, it might be much more exciting for the teachers to pool their resources and teach one course which analyzes telephone communication from a number of perspectives. One major area of study in this program might be how to create new organizations of knowledge within the public school context.

D. The National Study Group:

Although it can't be over-emphasized that this curriculum should be created by local teachers using local resources, there are several ways in which a national study group could be of vital importance.

It might have the responsibility of recording and verifying what

is generalizable from the local experiences. This record would then become a "How to Create a Community-based Curriculum" handbook, which could be used in communities across the country.

It might have the responsibility of developing, through working directly with the teachers involved, acceptable solutions to various problems of implementation. These problems might include the integration of the community curriculum into traditional courses, and eventually the creation of new courses or new organizations of knowledge. They might also include developing community support for the project (speaking at Lion's Club luncheons, writing articles for the local paper, etc.) to alleviate mistrust for students "poking around" in community institutions.

This study groups should also face squarely the problem of student alienation or powerlessness which this curriculum could conceivably foster or exacerbate. Presumably this would be more of a problem in the social rather than the natural sciences area. If a student learns that the local phone company apparently discriminates against women in its hiring policy, he may well want to see that practice changed. Yet in attempting to achieve change he may be completely rebuffed. And in fact, if he persists he may be actively punished through social pressure or even legal sanction. What then will the student have learned? The national study group must consider carefully the implications of encouraging students to study community social practices. It might well decide that in some instances the potential harm or trauma to the student outweighs the potential gain from a spirited intellectual inquiry and would consequently advise that certain topics not be pursued. Or it might develop simulation techniques which would

lend a safe distancing effect to the study. Or it might develop materials to foster coping skills which would enable students to deal with the frustrations of the real world.

Another major responsibility of the national study group might lie in the area of student skills and tools, necessary for and developed through the community-based curriculum. It could develop a transferrable description of those skills and could study their value in a variety of settings. One major skills area in the community-based curriculum is the mastery of a variety of information processing techniques. Some of the competencies which should be developed (and which may not now be emphasized in many curricula) are participant-observation, surveying, interviewing, and listening. Another area is that of information display. Some of these competencies should include both audio and video recordings, taxonomic indexing, and linear programming. The final responsibility of the national study group might be to develop, through working with the teachers, appropriate naturalistic evaluation techniques.

Before this program in developing and using community learning resources can be implemented, a number of issues must be examined. One first step is the surveying of sites which are now attempting to implement procedures similar to ones we propose. Another is the determination of the feasibility of attempting to develop all three resources (teachers, sites, and curriculum) simultaneously in a single community. Included in the feasibility study would be questions of incentives and the potential scope of impact. If the program met feasibility criteria, a next step would be determining the composition of the national study group, and the selection of a small number of

sites where an experimental tryout would be possible. Performance objectives at each site would form the basis of an evaluation strategy and the development of specific evaluative techniques. Program procedures would be modified as evidence of effectiveness or ineffectiveness was assembled.

VI. NEXT STEPS

Each of the eight programs described above has been presented in enough detail to make clear the general focus and scope of the proposal. However, at this stage, none of the programs has been examined in depth. Consequently, the time period between January and May 1972 has been set aside for this purpose. During this period the feasibility of each plan will be examined in detail, and a carefully specified program plan will be prepared. The development of these program plans will be coordinated by members of the Planning Unit who will be assisted by a staff of outside consultants.

The end-product of this analysis will be sets of detailed specifications for each program. These program plans will describe the basic steps to be followed in initiating the implementing each proposed program. Anticipated developmental, operational, and dissemination costs will be presented along with a reasonable time schedule for each phase of the program. The human and material resources required to undertake each proposed program will be specified. The benefits to be anticipated from each program will be described, and methods

for evaluating the effects of the program will be suggested.

In developing detailed program plans, a large number of complex, interrelated questions will be raised for critical analysis. Specifically, we expect to study the ways in which incentives, information, sanctions, and agents--as defined earlier--are involved in creating and maintaining those problems the programs are designed to address. The ways in which these same conditions must be modified to realize program objectives will be carefully specified.

Some of the questions that will have to be considered for each program include the following:

--Incentives: Since each program will require the participation of groups with different interests in the educational process (e.g., students, teachers, supervisors, etc.), what will induce these groups to give the needed support?

--Information: To what extent and in what ways does each program depend upon obtaining information not now readily available and delivering it to individuals who may need or want it?

--Sanctions: What legal and quasi-legal arrangements may stand in the way of implementing each program? How can these barriers be removed.

--Agents: What new mechanisms for mediating and delivering educational services may be required by each program? Will students, parents, teachers, supervisors, the media, employers, etc., be expected to fill new and unfamiliar roles?

For each program questions of this kind will be considered. Answering these questions will necessarily define some of the essential characteristics of each program.

When the detailed program plans are available in May 1972, they will be studied and compared in order to determine which one(s) should be implemented as NIE programs beginning in FY 1973. This will necessarily be a difficult choice, requiring attention to a variety of criteria, such as the following:

--The significance of the specific problem addressed: To what extent does the program respond to a central educational problem?

--Availability of people and resources: Are the individuals and resources needed to implement the program now available and in good supply?

--Costs in money and time: How much will the program cost, and how long will it take?

--Political feasibility: Does the program require the support or acceptance of various interest groups who are more likely to oppose it?

--Potential payoff: Do the probable outcomes of the program promise to make a significant contribution to the reform of the American educational system?

--Implementability: Are there any other barriers to the successful execution of the project?

--Appropriateness as an activity for the Federal Government: Does the program have elements which will place the Federal Government in an inappropriate role vis-a-vis the states, local communities, citizen groups, etc?

--Appropriateness as an activity for the NIE: Is the program an activity that is basic to the R&D mission of the NIE, or should it perhaps be assumed by some other agency?

--Potentially undesirable side-effects: Is there a possibility that the program will induce changes, or create conditions in American education that are unintended and undesirable?

--Program balance: Will the implementation of this program, considered in relation to the other programs supported by the NIE, contribute to a well-balanced R&D effort?

VII. OTHER POSSIBLE R&D ACTIVITIES

The eight programs described above have been proposed as R&D activities appropriate to the Office of Directed Programs. If any of these programs are implemented in FY 1973, it may be assumed that they will be assigned to that Office. There are, however, two other operating units that have been proposed for the management of NIE R&D activities--the Office of Resource Development and the Office of

Practices. Most of the work of these two Offices will be transferred into the NIE from the OE, but in each Office a small amount of "new" FY 1973 money may be allocated for new R&D work. In this section some possibilities for projects in these two Offices are described.

The relationship between the model described above and the activities proposed for the Office of Resource Development and the Office of Practices should be described. As originally formulated, the model was meant to guide the preparation of programs that might be assigned to the Office of Directed Programs. The feasibility of using the model as a more general guide for all NIE R&D work was not considered. This is, however, a possibility. If, for example, one examines the ongoing R&D work in OE that will be transferred into NIE, it is clear that most of it is focussed on what we have called Substance. There is also some R&D work in Productivity, but very little in Decision-Making or Access. This suggests at least one useful feature of the model, i.e., its ability to indicate where R&D effort has been concentrated in the past, and where it has been lacking. However, it is not clear at this point that the model will have the same utility in R&D planning for practice improvement or resource development as we anticipate in directed programs. This remains a problem for further study. As the model is examined in greater detail, the question of its appropriateness for all R&D planning will be given thorough consideration.

1. Possible New Projects in the Office of Resource Development: Most of the R&D activities in this Office during FY 1973 will represent continuations of projects now administered in the OE. Only a small part of the "new" money will be allocated to this Office.

The following two projects are examples of what might be funded in this area during the coming year.

a. A Longitudinal, Community-Based Study of the Variables that Contribute to Human Learning: This project is a major, longitudinal study of an entire community, including all those characteristics that are likely to contribute to the educational development of the inhabitants. The influence of home and family characteristics, social class structure, school facilities and programs, health, recreation, and welfare services, as well as many other variables would be systematically examined. An interdisciplinary team of behavioral scientists, data analysts, and community specialists would design procedures for collecting and analyzing data to determine what the principal sources of learning variance are in such a community context. Developing an empirically-based model of school and community influences on human learning has implications both for the allocation of educational resources and for the need to increase educational productivity.

b. Basic Studies of the Learning and Instructional Processes: This effort is designed to provide a deeper understanding of the processes of school learning and instruction. An interrelated series of studies is proposed; each will contribute to a stronger basic theory of the educational process. Examples of some of these investigations are the following:

--The effects of subtle and elusive school-atmosphere variables;

--the nature of charismatic teaching;

--physiological variables, and their effects on the efficiency of learning;

--the culture of the classroom;

--the development of teacher belief systems and their expression in the classroom; and

--new techniques for measuring the outcomes of instruction.

c. Basic Studies on Communication, Decision-Making, and Utilization of New Educational Ideas and Practices: A series of studies might be undertaken to contribute to the theory and practice of educational change. Attention might be given to three areas:

--Research on the Flow and Fate of Educational Innovations: NIE and other agencies will be unable to provide meaningful and relevant assistance either on specific innovations or on the improvement of practice in general without an understanding of the flow of innovations from their origin through mediating systems and channels to actual adoption.

--Development and Testing of Alternative Models for Facilitating Validated Educational Innovations: Studies are needed to identify and develop educational manpower with the skills necessary to stimulate interest in and adoption of innovations, and to follow through to insure the quality of the adopted practice.

--Methods of Assessing Innovations and Their Consequences: This effort is to develop needed tools, such as procedures for the diagnosis and assessment of innovation processes within and between complex organizations; development of a typology of innovations; and methods for assessing the consequences of innovation adoption.

2. Possible New Projects in the Office of Practices: As in the case of the Office of Resource Development, most of the first year's R&D activities in the Office of Practice will be transferred into NIE from OE. Only a small portion of the "new" money available in FY 1973 will be allocated to the Office of Practice. The following two projects are examples of what might be funded in the practices area during the coming year.

a. Strengthening the Craft of Teaching: There are at least two ways in which we may try to improve the quality of the experiences provided by the educational system. One way is to build a stronger basic theory of learning and instruction; a project consistent with this approach is described in the resources area. A second way is take direct action to strengthen the practice of teaching as a craft; the project described here is designed to accomplish this purpose.

It is proposed that the craft of the educational practitioner be given careful and intensive study. This will involve the identification of outstanding practitioners, learning as much as possible from them concerning the ways in which they work, establishing the conditions under which their skills can be extended and improved, and sharing the results with other practitioners as effectively as possible.

This program to strengthen the craft of teaching has several fairly obvious components which might be considered:

--Highly successful practitioners could be identified;

--the skills of these practitioners could be described according to different paradigms of educational practice;

--skilled performances could be observed and faithfully recorded--probably using either 16 mm. sound motion pictures or videotape--and subsequently analyzed;

--the development of the skillful practitioner could be studied using self-report procedures as well as longitudinal observations;

--the impact on students of prolonged association with a teacher who is a master of his craft could be studied;

--techniques for extending the impact of the exceptional practitioner could be developed, e.g., in the development of deeper theories of the educational process and in the education of prospective teachers.

b. Model School Programs in Open Education: The most searching recent studies of education in the United States conclude that the highest priority should be assigned to the development of appropriate forms of open education. The urgency of such a project is all too apparent, since examples of open education are proliferating so rapidly in the United States that it deserves to be called a fad. Unfortunately, many attempts to implement open education labor under severe handicaps. Often the enthusiasm with which such efforts are initiated is not accompanied by any detailed knowledge concerning the specific procedures that can determine its success. If present trends continue there is a strong likelihood that five years from now the residue from this enthusiastic effort will be disappointment and dismay.

There are at least four persuasive reasons for the NIE to support an R&D effort in open education:

--There is widespread client and practitioner interest in adopting it;

--open education promises to increase children's liking for both school and learning;

--open education is committed to helping children acquire the academic skills needed for contemporary life, while at the same time it strengthens their personal resources (self-confidence, persistence, creativity, etc.);

--open education introduces the basic academic skills to children as vehicles for understanding their own experiences, and does so in such a way as to extend their usefulness in extra-school living.

Although a list of R&D projects to support the development of appropriate forms of open education is potentially very long, a basic approach is to identify or establish functional models that demonstrate outstandingly effective practice. A number of such model demonstrations are possible:

--A teacher education program in which teachers who will work in open education settings are recruited, selected, and educated;

--an in-service program for experienced teachers who will be working in open classrooms.

--a program for systematically converting an existing school from more traditional to more open practices;

--a program for developing new curriculum materials appropriate to open education.

SECTION FOUR: TRANSITION

Of the total FY 1973 NIE budget, approximately $100,000,000 will be absorbed by continuing programs that transfer from USOE to NIE. Essentially, those OE R&D activities concerned with systematic efforts to gain new knowledge relating to education, or to develop and explore new approaches to education will be transferred. If a program's basic task is to create new knowledge or solutions, its budget is slated for transfer to NIE. If the program's basic thurst is to assist education consumers using the tools we already possess, its budget will remain in OE.

The transferring programs involve at least 267 current contracts and grants that will continue into FY 1973. Added to these will be new contracts and grants yet to be awarded from uncommitted FY 1972 funds. Major programs include Career Education, Institutional Support, and Experimental Schools. Programs with smaller budgets include R&D Centers from the Bureaus of Education for the Handicapped and Libraries and Educational Technology, the Research Training Program, and the Research and Development Programs from the National Center for Educational Research and Development. A summary of active contracts in transferring programs is provided in Figure 3, and a complete listing of contracts, with titles, costs, and dates is available.

The transfer of authority, records, and operation of OE projects and programs must take place after the NIE bill is passed. Contracting obligations and procedures, as well as substantive content, must be clearly understood, and staff must be recruited (or transferred) and trained to assume operation for NIE by July 1, 1972.

FIGURE 3. Summary of Active Contracts and Grants in Transferring Programs, and Present Status of Estimated FY 1972 Program Funds (As of 12/71)

Program	Total Transferring Contracts	Contracts that will continue from: 7/1/72-9/30/72	Contracts that will continue from: 10/1/72-Beyond	Contracts over $10,000 Continuing Beyond 10/1/72 and Monitored from: Regional Office	Contracts over $10,000 Continuing Beyond 10/1/72 and Monitored from: Washington	Estimated FY '72 Funds: Total	Estimated FY '72 Funds: Unobligated
Career Education:						$20,000,000	$16,730,000
Obligated	6	2	4	-	4		
Committed	3	-	3	-	3		
Institutional Support:						32,100,000	17,260,000
Obligated	8	-	8	-	8		
Committed	13	-	13	-	13		
Experimental Schools:						15,000,000	3,400,000
Obligated	6	-	6	-	6		
Committed	-	-		-	-		
Research & Development (excluding regional research):						5,200,000	1,350,000
Obligated	91	18	73	69	4		
Committed	12	2	10	-	10		
Regional Research:						1,800,000	1,480,000
Obligated	34	8	26	-	-		
Committed	-	-	-	-	-		
Researcher Training:						3,250,000	3,130,000
Obligated	2	1	1	-	1		
Committed	-	-	-	-	-		
BEH Centers & Projects:						5,150,000	4,970,000
Obligated	15	3	12	-	12		
Committed	11	-	11	-	11		
BLET & Libraries:						2,750,000	2,560,000
Obligated	5	3	2	-	2		
Committed	18*	-	18*	-	18*		
Total:						85,250,000	50,880,000
Obligated	167	35	132	69	37		
Committed	110	13	97	-	55		

* 1 from NCERD

Transferring the programs and personnel is complicated, in that these programs will not continue to operate in the same manner as they did in USOE. A number of management and substantive changes are being made, including reclassifying programs into new NIE units; adapting some programs to fit NIE priorities; specifying job roles so that NIE has more direct participation and technical involvement in programs; and developing procedures to make programs more accountable. This section of the Interim Report briefly describes: (1) the programs, (2) evaluation status of transferring programs, (3) management changes being considered, and (4) plans for placement of personnel who currently operate the programs.

I. PROGRAM INFORMATION

A. Career Education Models:

The goal of the Career Education Program is to make a more comprehensive set of educational choices available to students and parents by developing career-oriented alternatives to traditional educational practices. Toward the end of fiscal 1971 four alternative strategies in career education were identified and parameters for models were outlined. The school-based model demonstrates methods for restructuring existing school systems around a career education program (grades K-14) to give all students more career options. The employer-based model enlarges the role and responsibility of employers and other community organizations in educating young people through work-related and academic career experiences. The home-based model focuses on a television series, primarily for out-of-school adults. Finally, the residential model, intended to serve a six-state regional rural population, is located at Glasgow (Montana) Air Force Base. This model

is designed to meet the unique career education needs of both whole families and single individuals who will live on-site and graduate from the training program to take specific jobs.

These models will make the transition from planning, design, and developmental preparation done during 1972 to test-site research and development and field experimentation in 1973. Their funding history is shown in Figure 4, including the FY 1973 budget request submitted.

FIGURE 4

Career Education Funding History
(dollars in thousands)

Models	Fiscal Year 1971	Fiscal Year 1972	Fiscal Year 1973 (request)
School	$ 2,000	$ 5,500	$ 6,000
Employer	2,300	5,500	4,000
Home	300	500	5,000
Residential	4,000	4,000	4,500
Support Activities*	9,275	5,000	5,500
Total	$17,875	$20,500	$25,000

*Including Vocational Educational Centers and research projects related to career education, such as counseling and guidance.

B. Experimental Schools:

This program supports a limited number of large scale, five-year projects that interrelate curriculum, instruction, administration, community, and organization in order to improve our current educational system. A major focus in each project is on the documentation and evaluation needed for other educators to understand and adopt improved systems developed at the experimental sites.

Three sites had operational programs in 1971 and eleven more sites have been awarded planning grants for further development of alternatives to current school structures, practices, and performance. Three to five of these planning-grant sites will be operational in September, 1972. Five sites were given short-term grants to develop and test innovative ideas which could be included in the development of comprehensive programs. During 1973 the continuing programs will be monitored and supported, and five new projects will become operational. The funding history for the programs, including the FY 1973 request, is shown in Figure 5, below.

FIGURE 5

Experimental Schools Funding History
(dollars in thousands)

	Fiscal Year 1971	Fiscal Year 1972	Fiscal Year 1973 (request)
Amount	$12,000	$15,000	$30,000
Number of Sites			
Planning	19	10	10
Operational	3	6	10
Prior year funded	(--)	(3)	(3)
Current year funding	(3)	(3)	(7)
Number of Students	11,000	24,000	40,000

C. Institutional Support:

The Office of Education presently supports 24 Education Laboratories and Research and Development Centers at an average cost of $1,300,000 per year. The laboratories were established to meet the practical and immediate needs of schools, and to respond to both regional and

national problems in their program efforts. One of the laboratories also serves as headquarters for a National Program on Early Childhood Education, comprised of a sonsortium of university research centers throughout the country. The Research and Development Centers, established within the formal structure of higher education, conduct research and development activities on selected topics at all levels of education.

Current programs in Laboratories and Centers have been categorized by a joint NIE/NCERD task force into eight areas that reflect their current content and will be the basis of their evaluation. The requested 1973 funding level for all of these programs is $32,100,000. The areas are: Organizational Change, Personnel Development, K-12 Curriculum Programs, Management and Evaluation Systems, Multi-cultural Language Development, Early Childhood Education, Career Education, and Community Interaction and Participation. Each Institution is being asked to define its ongoing programs more carefully than it has in the past, and to specify completion dates for each program.

In cooperation with NIE Planning Unit, NCERD is developing a new institutional support policy which will treat mature institutions in a different manner from new institutions. As current programs in the areas listed above are completed, the NIE will purchase new programs that meet its priorities from mature institutions. These new programs will have fixed termination dates and specified outcomes. In future years, promising new institutions providing unique capabilities not available in the private sector, will receive core support until they become mature contractors.

D. Educational Research and Development Activities:

These activities include funds granted in response to unsolicited proposals from individuals and agencies that are interested in adding to the knowledge base or solving specific problems in education. Such proposals are now supported by NCERD, the Bureau of Library and Educational Technology, and the Bureau of Education for the Handicapped, with total funds of about $15,000,000. Typical projects of each of the Bureaus are described below.

NCERD supports a number of large R&D projects. One example is Project Talent, which is a longitudinal follow-up study of 400,000 persons who were in high school in 1960; another is the common management information and planning system for 400 colleges and universities that is being developed by the National Center for Higher Education Management Systems. An example of somewhat smaller grants is found in the interdisciplinary research program, which allocates a fixed sum to specific disciplines (e.g., economics, anthropology, etc.), in order to broaded the talent base in educational research.

NCERD also supports a small-grant Regional Research Program with grants limited to $10,000. Typically this program funds students and researchers from small colleges, or pilot studies by better-known researchers. As Figure 1 shows, 103 of these projects will continue into FY 73, with 20 to be completed by October 1, 1972, and 83 to continue beyond that time.

Finally, NCERD's Research Training is funded at about a $3,000,000 level and is designed to strengthen the training of research and development personnel in education. It supports fellowships for graduate research training, and training consortia to develop materials

and procedures for training researchers. A program, initiated in FY 71, established internships on major projects with experts who are recognized for their ability to solve educational problems.

The eighteen projects which are transferring to NIE from the Bureau of Library and Educational Technology include work in automated data processing, and projects for the disadvantaged. For example, the Los Angeles Unified School District provided for development of an automated system to evaluate, select, purchase, store, control, and distribute large volumes of all types of instructional materials. Another grant to the Philadelphia School District is supporting a project to develop community library and student learning center which will serve as a bridge between the both school and public libraries, and the inner-city community where the facilities are located.

At the present time, only two of the 18 projects funded during FY 1971 will continue after July 31, 1972. There are, however, 17 projects that are likely to receive 1972 funds, with about half of these continuing under NIE into 1973.

Two budget lines, Research and Demonstration, and Physical Education and Recreation Research and Demonstration, support almost $19,000,000 in research on education for the handicapped. Of this amount, $5,150,000 is supporting projects that are being transferred to NIE. These include the research and development centers at Yeshiva University, Indiana University, University of Oregon, and University of Minnesota, and a selected number of other basic research projects.

II. CURRENT STATUS OF EVALUATION PLANS

A program-by-program evaluation is planned this Spring for all R&D programs that will transfer from USOE to NIE. This review will be used in making recommendations for program changes. The general plan (for master and specialist panel reviews) described in the Evaluation section will be used. The new Director will appoint the Master Panel and with his approval of the evaluation plans, the system will be applied to all programs.

The new evaluation system is being developed and tried on NCERD's program of Regional Laboratories and university-based R&D centers. Called the Institutional Maturity Model of R&D management, it will be used to provide the information necessary for implementing a new institutional support policy for Laboratories and Centers. This model assumes that programmatic research requires start-up time for program planning and staff acquisition, and that when a program is approved and successfully operating, the agency should be committed to continuing the program until it is completed. Accordingly, the maturity model provides core financial support to institutions during the first several years of their existence to pay for start-up and management expenses while the R&D capability is being built. The institution is carefully monitored and nurtured, with frequent evaluation during this period. Once an institution demonstrates mature management and R&D capability, however, support shifts from the institutions per se, to programs that the institutions undertake. In effect, NIE purchases programs from the institutions. The institution submits a program plan in response to an important educational need, with clear milestones and a fixed ending date. The plan has

management expenses, and an earned fee built into it. If the plan is approved, a moral committment is made by the agency to support the program to completion given satisfactory progress as determined by milestone reviews.

We believe that the general principles underlying this support policy can be applied to all large directed programs and comprehensive experiments, and that the supporting evaluation system will have similar general utility. Several steps have already been taken to implement the new support policy and evaluation trial. At present, a briefing on the support policy and the related evaluation plan is being prepared. With the Director's approval, this briefing will lead to official acceptance of this plan or an adapted version of it.

Because the support policy requires that each institution submit a basic program plan for each of its programs, guidelines for those plans are now being developed. Further, a one-page description of each institutional program has been prepared, and is being used to define areas for assignment of Specialist Panels. The following tentative Specialist Panel areas have been identified:

Organizational Change
Personnel Development
K-12 Curricular Programs
Management and Evaluation Systems
Multi-cultural Language Development
Early Childhood Education
Career Education
Community Interaction and Participation

Figure 6 shows how Laboratory and Center Programs are likely to be distributed across programs.

Finally, the Planning Unit and consultants are currently assembling both the statistical and substantive information needed to

identify Specialist Panel areas for R&D programs outside the Laboratories and Centers. Large projects (over $100,000) that have a history of operation ('72 funds or before) and will continue through most of FY '73 have been identified and will receive first priority in evaluation.

The most urgent present need in development of the evaluation system is to recruit persons to serve on the Specialist Panels for the Spring Review. Lists of highly qualified persons have been prepared. By June, the Basic Program Plans will be in hand, and the evaluations done. With the passage of legislation and with the approval of the Director, the Master Panel will be assembled to consider the detailed program recommendations from the Specialist Panels.

FIGURE 6

Labs & Centers Program Distribution
Within NIE Units

Labs and Centers	Office of Practice Improvement					Office of Directed Programs		
	Organizational Change	Personnel Development	K-12 Curricular Programs	Management and Evaluation Systems	Multicultural Language Development	Early Childhood Evaluation	Career Education	Interaction and Participation
Ohio State	*	****					*	
FWLERD	*	**		*		*	*	*
AEL	*					*		
RBS	*		*				*	
CASEA	****			*				
UCLA	*			****				
Berkeley	***							*
Stanford	*	*						*
Johns Hopkins	*						***	*
NPECE						*		
NCHEMS				*				
Pittsburgh			***					
Wisconsin			***					
SWRL			*					
McRel		*						*
CEMREL			***					
NLHE		*		*				
North Carolina				*			*	
CUE							*	**
SEDL					**			
SWCEL					**			
NWREL		*	*		*			
Austin		**						

* = One program

III. MANAGEMENT CHANGES BEING CONSIDERED

A number of changes are planned to improve programs, both in substance and in management. One change is in the placement of programs in the new organizational units within NIE. Each of the three substantive offices planned for NIE focuses on a specific purpose and has a unique management style and constituency.

As described in the section on organization, the work of the Office of Directed Programs is designed and specified by internal staff, and carried out through closely monitored contracts. Research projects in the planned Office of Resources are initiated by unsolicited proposals from outside constituents. These proposals are selected for funding by peer panel review. Management there is less stringent, since the proposer was selected on the strength of his ideas and plans, and he is the one who knows best how to implement those plans. The planned Office of Practice strikes a middle ground between the close management style of the Office of Directed Programs and the freer style of the Office of Resources. Here, parameters for contracts are described--such as features that an experimental school proposal must contain--and outside agencies work within those parameters to design a proposal. Management is most concerned with the objective evaluation of practical attempts at improving educational practice so that generalizable elements can be identified.

Those transferring programs which involve more than one NIE purpose and management style are likely to be divided and assigned to more than one NIE office. Model I, the School Model of the Career Education work, for example, fits the style of the Office of Practice Improvement, because of its focus on the current school system and

its initiation by the local education agencies who submitted proposals. Models II, III, and IV, on the other hand, are likely to be placed within the Office of Directed Programs, because they are more directed efforts, and involve significant departures from the current educational system.

Experimental Schools fits within one unit, the Office of Practices, because it is designed to make improvements within the current education system rather than designing alternatives to it. In addition, the actual change configurations were planned for the most part by those who wrote proposals rather than being directed from within. Because programs in the Laboratories and Centers are diverse, they will be placed within all three NIE offices of substantive concern. Those developing institutions that are not classified as mature will be placed within the Office of Resources. There they constitute a new R&D capability and enhance NIE's mission to develop a talent pool that might be called on to help solve problems and improve practices when they develop into mature institutions. Five program areas of some of the more mature institutions will be placed in the Office of Practice because they were designed and developed externally and deal with fairly modest changes to the existing school system. These five areas have been designated organizational change (frequently involving changes in administrative practices), personnel development, K-12 curricular programs, management and evaluation systems and multicultural language development. Three of the program areas: Early Childhood Education, Career Education, and Community Interaction and Participation, will be assigned to the Office of Directed Programs. They correspond to directed programs being planned for NIE, and the

Planning Unit feels that they can be strengthened through coordination with these new NIE efforts.

Placement of smaller programs will be determined on a similar basis of focus and management style. Most research activities from NCERD, BLET, and BEH will be located in the Office of Resources, because they contribute to the knowledge base. The small grants Regional Research Program will be placed within the Office of Resources, because the small grants are linked to increasing the talent pool and the knowledge base. As a consequence, the administration of this program may be conducted by the Office of Resources, rather than the Regional offices as is presently the case.

BEH and BLET Research Centers, which will continue to need core support for some time, will also be placed with other developing institutions, within the Office of Resources. Figure 7 summarizes placement of OE programs within the NIE structure.

As described in the section on NIE organization, responsibility for program management functions will be as follows:

FUNCTION	RESPONSIBLE OFFICE
Technical Program Management	Operating Units (e.g., Office of Directed Programs, Office of Resources, Office of Practices)
Contracts and Administrative Management	Contracts Unit in Office of Management
Evaluation Management	Evaluation Unit

Some changes in management style of current programs must be made to be consistent with this plan. In many cases these management changes involve evaluation procedures that make mature programs more

FIGURE 7

Proposed NIE Unit Assignments of Transferred Programs

Office of Directed Programs

- Career Education Models II, III, IV
- Program Support for Institutions (e.g., programs relating to Early Childhood Education, Career Education, and Community Interaction and Participation)

Office of Resource Building

- Unsolicited Research (e.g., Project Talent, Multidisciplinary Research Program, BLET, and BEH projects, etc.)
- Small Grants Program
- Developing Institutions (including BEH and BLET centers)
- Researcher Training

Office of Practices

- Development Project (e.g., National Center for Higher Education Management Systems)
- Career Education Model I
- Experimental Schools
- Program Support for Institutions (e.g., programs relating to Organizational Change, Personnel Development, K-12 Curricular Programs, Management and Evaluation Systems, etc.)

accountable. For example, consider the separation of nurturant and evaluative functions.

Program monitors presently assume roles of advocate and critic, producing role confusion and awkward relationships with the field. These functions will be clearly separated within NIE. The evaluation unit will be responsible for selecting the people who will assess the programs' impact, and the technical advisors within the operating units will provide support and assistance to the contractors. The evaluation unit will furnish information to the Director and the program managers to correct deficiencies and strengthen programs. The evaluators will be less susceptible to cooptation in not being involved in daily interactions with the contractors and in not having been involved in the initial decision to select a particular contractor. Centralizing the evaluation function allows common standards to be applied to different parts of the organization and provides an impartial source of information to the Director for use in deciding how to allocate his resources. Separation of the evaluation function from the operating agency also renders the evaluative information more public. This is likely to encourage NIE operating units to be more responsive to the concerns of NIE management.

The Lab and Center programs might be used as an example to illustrate this role change. Currently, both technical and administrative management is largely provided by a single person in OE, a generalist who is responsible for three or more institutions. Some support is provided in contracting details, but the agency's technical program support is largely restricted to the comments of the site review team during its annual visits. The agency monitors are not equipped to

deal with matters of substance. By dividing fairly homogeneous Lab and Center work into eight program areas, and by providing an increased staff level for NIE, it is possible to strengthen the technical competence of program monitoring. The technical advisor in NIE may work with several institutions in one program area, and report to that program's manager. He will always have a one-year, pre- or post-doctoral trainee assistant to help him in the research area. The contracts unit within the Office of Management have enough personnel to relieve the technical advisor of much of the administrative detail that is currently the responsibility of the OE Laboratory or Center Program Officer.

The technical advisor will be expected to build and maintain his expertise on program-related matters. NIE personnel projections allow him to spend up to half his time in residence at institutions, either helping to perform some part of the R&D, or working with Lab personnel to duplicate small parts of the program. He is responsible for providing NIE's separate Evaluation Unit with a brief but complete report of his programs.

The small grants program can provide another example of management changes to provide more technical direction and participation. Currently, one generalist in each region monitors the selection and progress of each small project. Yet, no one needs specialized technical support and interaction more than the graduate student or the beginning researcher from a small college who typically receives these grants.

To provide this guidance, we are considering a program that will fund a recognized senior researcher along with each small grant

recipient. The recipient will then have an opportunity for help in improving his study and adding to his experience. NIE will solicit the support of first rate senior researchers in helping them recruit the most promising young talent for the NIE mission. Each of the changes needed to improve management of R&D must be identified, and personnel roles to accompany the changes must be defined. This information will be basic to personnel transition tasks described in the next section.

IV. PERSONNEL TRANSITION

Fiscal 1973 personnel requests that were sent to OMB include an estimate of about 70 permanent positions associated with programs that transfer from USOE and to be filled during the first six months of FY '73. However, as described earlier, NIE's R&D management policies for transferring programs are likely to be different from OE's, and the Director will need latitude in selecting qualified personnel to implement those policies. Sometimes current staff will be appropriate, and sometimes they will not. When new staff are added, they must be oriented by existing personnel, and when current staff do not come to NIE with their programs, satisfactory positions must be found for them. These transactions are complicated and their scheduling is important. The transfer becomes even more complex because of several very normal conditions. For example, people within OE feel a natural propriety toward the programs they now operate; the Civil Service System has regulations that govern positions associated with transfer of programs; and the Federal Government Employees Union is extremely interested in the mechanics of NIE's

personnel transactions.

Personnel transition procedures offering the best resolution of the above issues must be developed and carried out by July 1, 1972, when the Institute becomes operational. Some of the procedures must be developed completely by the NIE Planning Unit, but others are being developed by a joint Task Force of the NIE Planning Unit and USOE staff. The work of the Task Force will be coordinated by USOE's Office of Management. Specific personnel transfer tasks and the responsible agency for each are:

1. List and describe both the management and substance of every transferring program or project (NIE/USOE).

2. Describe NIE organizational structure and R&D management policies; identify where current programs will fit into the structure or be adapted to it. (NIE)

3. Identify NIE staffing requirements for continuing programs, and write position descriptions to fill those requirements. (NIE)

4. Identify personnel vacancies and new personnel needs within USOE and provide position descriptions for them. (USOE)

5. Review current OE staffing for programs that will transfer, and match qualifications with NIE positions and USOE openings. (NIE/USOE)

6. Provide job information and assess desires of current OE staff members. (USOE)

7. Coordinate job and personnel decisions with appropriate agency offices and organizations. (NIE/USOE)

8. Schedule orientation and gradual assumption of duties by all staff who undertake new positions. (NIE/USOE)

9. Process papers required for transfers (NIE/USOE)

10. New NIE staff assume operational duties. (NIE)

Several of these steps are already underway. As a part of step one, all projects and programs to be transferred are being listed, with statistical data and substantive descriptions. As a part of step two, the Planning Unit has developed the tentative structure for NIE described earlier in this document.

The first part of step three, identifying staff requirements for NIE, is also well underway. Fiscal 1973 personnel requests, based upon the functions that staff must fill, have been sent to OMB. The rationale and program-by-program statistics for these requests is developed in an Internal Note that is available. These NIE positions, allocated to continuing programs, particularly the 70 or so that are likely to be filled during the first six months must be precisely defined. These definitions must be clear enough to show how closely the NIE mission can or cannot be met by any existing staff or new applicant for each position. Members of the NIE Planning staff are being assisted in this by members of OE's personnel staff.

Step four, identifying personnel vacancies and new personnel needs within USOE, is the responsibility of the Office of Education and a major concern of the Task Force. Managers throughout the Office have been alerted to the expected need for personnel placement, employees are being asked to update their Form 171 records, and the Office of Management and the personnel department are organizing a position search. Step five, reviewing current OE staffing for transferring programs, will be done strictly on the basis of job function and personal experience in that function. Criteria will be explicit and relate to NIE's attempt to get high level researchers and persons intimately acquainted with educational problems involved in managing its major programs. By late February, needs and opportunities within OE and NIE should be identified and personnel files of staff and applicants studied so that step six, which involved counseling of employees, can take place. Step seven, the actual identification of personnel transfers, will take place gradually, although it will begin as early as

possible (certainly no later than April 30). Even before official transfers take place, the job orientation, and in some cases, assumption of duties on a detail basis, will take place. How NIE will handle its personnel services has not been decided; it may or may not hsve its own administrative office for this purpose. Whatever the actual locus, the processing of papers must take place by June 15, so that the new NIE staff may assume operational duties on July 1, 1972.

RESOURCES AREA: COMMISSIONED PAPERS

1. Final Report of Research Priorities for Fundable Projects of The National Institute of Education, December 1, 1971, by:
   Charles S. Benson
   James W. Guthrie
   Alice S. Ilchman
   University of California, Berkeley

2. The Problem of Obtaining and Using Resources in Education: Some Proposed Programs for Purposive Change, December 1, 1971, by:
   James W. Alleman
   Kenneth J. Korbel
   James M. Waters
   Wilbur L. Young
   Reuben A. Zubrow
   With the assistance of:
   Loretta K. Ramsey

3. Educational Outcomes Processes and Decisions: Frontiers of Economic Research and Development For the 1970's, by:
   Mary J. Bowman
   University of Chicago
   With consultants:
   C. Arnold Anderson, University of Chicago
   Lee Berham University of Chicago
   Edward W. Erickson, University of North Carolina at Raleigh
   Robert M. Fearn, University of North Carolina at Raleigh
   Richard Freeman, University of Chicago
   Herbert Gintis, Harvard University
   Watts Hill, North Carolina State Board of Education
   George R. Iden, University of North Carolina at Chapel Hill
   Loren A. Ihnen, University of North Carolina at Chapel Hill
   Robert G. Myers, University of Chicago
   Margaret G. Reid, University of Chicago
   Thomas I. Ribich, University of North Carolina at Chapel Hill
   T. W. Schultz, University of Chicago
   J. Allen Thomas, University of Chicago
   T. Dudley Wallace, University of North Carolina at Raleigh
   Finis Welch, City University of New York and NBER
   David Wiley, University of Chicago
   Robert J. Willis, City University of New York and NBER
   Douglas M. Windham, University of North Carolina at Greensboro

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Arnold Lieberman, John Wirt, Roger Levien, National Institute Of Education: Methods for Managing Programmatic Research and Development; Rand, Santa Monica (1971).
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(5) William S. Vincent, Board Members, The Public and Fiscal Welfare, TAR Bulletin, VIII, 1 (November 1967).